Ongoing Monitoring Report – 2024

PFAS OMP – Swartz Barracks

Department of Defence

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GHD Pty Ltd | ABN 39 008 488 373
Contact: [redacted]
230 Harbour Drive,
Coffs Harbour, New South Wales 2450, Australia
T +61 2 6650 5600 | **F** +61 2 9475 0725 | **E** cfsmail@ghd.com | **ghd.com**

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Abbreviations

Abbreviations	
AFFF	Aqueous film forming foam
ALS	Australian Laboratory Services
BOM	Bureau of Meteorology
COC	Chain of Custody
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
GHD	GHD Pty Ltd
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LOR	Limit of reporting
mAHD	Metres Australian height datum
mbgl	Metres below ground level
mbtoc	Metres below top of casing
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure (amended in 2013)
NHMRC	National Health and Medical Research Council
OMP	Ongoing monitoring plan
OMR	Ongoing Monitoring Report
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS Management Area Plan
QA / QC	Quality assurance / quality control
QLD	Queensland
Redox	Oxidation-reduction potential
RPD	Relative percent difference
SAQP	Sampling Analysis and Quality Plan

PFAS Group	Compound	CAS NoChe.
Perfluoroalkyl Sulfonic Acids	Perfluorobutane sulfonate (PFBS)	375-73-5
	Perfluoropentane sulfonate (PFPeS)	2706-91-4
	Perfluorohexane sulfonate (PFHxS)	355-46-4
	Perfluoroheptane sulfonate (PFHpS)	375-92-8
	Perfluorooctane sulfonate (PFOS)	1763-23-1
	Perfluorodecane sulfonate (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
	Perfluorohexadecanoic acid (PFHxDA)	67905-19-5
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

Units of Measurements			
L	Litres	M	Metres
Mg	Milligram	ha	Hectares
kg	Kilogram	µg	Microgram
mV	Millivolts	°C	Degrees Celsius
µS	Microsiemens	mm	Millimetre

Executive summary

Introduction

Department of Defence (Defence) engaged GHD Pty Ltd (GHD) to implement the Per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) (Defence, 2019) at Swartz Barracks (the 'Base') and the Swartz Barracks Management Area (as defined in the PFAS Management Area Plan (PMAP) (Defence, 2019).

Objectives

The objective of the OMP is to set out a program of monitoring to continue to assess the changes in the nature 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 a receptor, or potential future risk to a receptor. This data will be evaluated to determine environmental variability and significant trends in PFAS concentrations. This will inform any changes to the conceptual site model (CSM), the known risk profile and triggers for review of the OMP, PMAP (Defence, 2019), human health risk assessment (HHRA) (AECOM, 2017b) or ecological risk assessment (ERA) documentation (AECOM, 2018), if required. It will also inform the effectiveness of the remediation programs.

Monitoring scope

The scope of works for this OMR includes assessing the extent of PFAS in the environment, and changes to the distribution of PFAS over the period January to December 2024. It assesses whether any changes alter the understanding of the CSM and the risk profile with respect to PFAS impacts at the Base and surroundings. The April 2024 and October 2024 groundwater, surface water and sediment sampling events were conducted in accordance with the SAQP (AECOM, 2024a) and SAQP Addendum (GHD, 2024a).

Groundwater results and interpretive assessment

The main aquifer beneath the Base is the Oakey Creek Alluvium (OCA) aquifer. Previous reports have indicated the OCA aquifer has two hydro stratigraphic units - an upper layer which tends to have a higher clay content, overlying a lower layer which has a higher percentage of sands and gravels, and is considered the primary groundwater resource in the Oakey area. Typically, the maximum depth of the upper OCA is approximately 18 to 20 m bgl at the base. With the base of the lower OCA at least 50 m bgl. A basal clay layer (transition zone) exists below the sand and gravels of the lower OCA and above the basement rock. Forming an aquitard, between the OCA and the underlying bedrock, that is a combination of the OCA alluvial clays and weathered underlying Main Range Volcanics (MRV) or Walloon Coal Measures (WCM) (AECOM, 2016).

The interpreted groundwater flow directions for the Oakey Creek Alluvium aquifer at Swartz Barracks Management Area are consistent with the regional groundwater flow direction (east to west) and the elevations observed in previous investigations (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c). Groundwater elevations in the Oakey Creek Alluvium ranged from 386.09 to 402.58 m Australian height datum over the reporting period. Based on the limited groundwater elevation data for the Walloon Coal Measures, the groundwater flow direction is interpreted to be towards the west.

PFAS concentrations in groundwater were similar to previous historical results undertaken since the Environmental Site Assessment (ESA) (AECOM, 2017a). Mann-Kendall analysis identified eight wells with interpreted 'increasing' trends – five of these were associated with source areas on-Base and three were located off-Base. With further consideration of the magnitude of the changes relating to increasing trends, and the climatic effects, the increasing trends are either statistically insignificant or more likely a response to seasonal changes rather than providing any indication of plume migration. For example, the increasing trend in MW151 was based on a first time detection in April 2023 (0.02 µg/L PFOS) followed by a stabilisation in concentrations at concentrations of the same order of magnitude as the laboratory LOR (maximum in October 2024 of 0.03 µg/L PFOS). While this result for MW151 is still below the adopted drinking water guideline further consideration of potential additional monitoring locations in this area is recommended in updates to the OMP. This would allow better understanding of PFAS distribution in groundwater in this area.

The highest PFAS concentrations in the two sampling events of 2024 were detected in wells that monitor source areas on-Base. The highest concentrations were observed in groundwater in the vicinity of the former fire station and foam training area.

PFAS impacts in 2024 are indicated to the west, southwest and south of the Base, which is generally similar to that presented in the ESA (AECOM, 2017a) and subsequent monitoring reports (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c). There are few groundwater bores on western and southern extents of the plume. The OMP revision will address this gap and additional monitoring bores will be added to the program to increase certainty. Consideration of adding groundwater wells to the OMP near the western and southern extents would be beneficial prior to the next monitoring round to improve understanding of the plume extent.

Overall, the sampling results for wells in deeper aquifers (Section 2.2) in the 2024 monitoring period are consistent with historical results reported between 2018 and 2023 with Perfluorohexanesulfonic acid (PFHxS) + Perfluorooctanesulfonic acid (PFOS) concentrations generally below or marginally above the limit of reporting (LOR).

Surface water results and interpretive assessment

The highest PFHxS + PFOS concentrations in surface water in March/April 2024 were reported in the on-Base drainage channels. Drain 1 has the highest PFAS concentrations of all the on-Base drains. However, PFAS results in surface water from the April 2024 monitoring were generally lower in the on-Base drainage channels than the historical maximum concentrations. PFAS was not detected in Doctor Creek or upstream of the outflow of Drain 3 in April 2024. The upgradient location in Oakey Creek (SW040) is considered representative of ambient conditions in the creek. Overall, the results show the highest PFAS concentrations in surface water are present at monitoring locations within 1.5 to 3 km downstream of the outflow point of Drains 1, 2 and 3. The concentrations decrease with increasing distance downstream from Swartz Barracks to a point where the furthest downstream location in Oakey Creek (approximately 4.2 km south west of the Base boundary) and the sample location in Westbrook Creek (approximately 4.7 km south of the Base boundary) show that PFAS was not detected in April 2024.

Sediment results and interpretive assessment

The highest PFHxS + PFOS concentration in sediment reported in 2024 in drainage channel 1. New maximum PFAS concentrations were recorded in sediment in three locations in drainage channel 3. It is unclear if works were undertaken upgradient of drainage channel 3 prior to the sampling event that may have caused increased PFAS concentrations in sediment but this should be monitored in 2025 to determine if there appears to be an increasing trend, or if this was a single event. PFHxS + PFOS concentrations in sediment from the single location in Doctor Creek (SD007) were below the detection limit, as was the location in upgradient Oakey Creek (SD040).

Conceptual site model

The CSM was developed during the investigation stages (AECOM, 2017a). The OMP and the PMAP are being updated in 2025. The CSM summarises the linkages between the sources, exposure pathways and receptors.

The sampling completed over the monitoring period in 2024 has provided additional data to further understand the changing PFAS concentrations in groundwater and this has been used to update the CSM. Overall, PFAS concentrations were within historical ranges and generally do not indicate increasing trends. The data does indicate uncertainty to the extent of the spatial distribution of PFAS. The detection recorded at MW151 indicates that there is possible western migration of the plume and should continue to be monitored for increasing trends and potential for drinking water exceedances.

Despite a number of new maximum PFAS concentrations in groundwater, surface water and sediment, the sources of PFAS are well understood and the PFAS transport mechanisms and the groundwater concentrations are generally similar to historical data. Overall, data presented in this report indicates that the PFAS sources, pathways and receptors does not significantly change the understanding of the CSM. However, the variability in the understanding of the heterogeneity of the hydrogeological system between previous investigations supports the need for further assessment to increase understanding of PFAS migration. Future monitoring will continue to contribute to an evaluation of any potential changes to the CSM.

Summary and conclusions

The data collected during the ongoing monitoring program in 2024 suggest that the risk profile to human health and ecological receptors at Swartz Barracks and within the Management Area is unchanged as there were no new exceedances of the adopted guidelines. PFAS concentrations in groundwater, surface water and sediment are generally consistent with previous results reported in 2020, 2021, 2022 and 2023 (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c), with the exceptions outlined in the results above.

The data collected during the current monitoring period has shown no significant changes to concentrations of PFAS across the monitoring program. The data does indicate uncertainty to the extent of the spatial distribution of PFAS. The new maximum concentration recorded at MW151 indicates that there is likely western migration of the plume and should continue to be monitored for increasing trends and potential for drinking water exceedances. Recent investigations have provided additional information on PFAS migration and the heterogeneity of the hydrogeological system in the area, which has highlighted the need for a reassessment of the current monitoring network. Additional monitoring locations will be added to the western extent of the known plume in the review of the OMP.

The data collected during the ongoing monitoring program in 2024 suggest that the risk profile to human health and ecological receptors at Swartz Barracks and within the Management Area is unchanged as there were no new exceedances of the adopted guidelines. Based on the data, GHD considers that the conclusions and risk profile outlined in the 2017 ESA (AECOM, 2017a), HHRA (AECOM, 2017b) and ERA (AECOM, 2018) apply at the time of reporting.

This report is subject to, and must be read in conjunction with, the limitations set out in Section 1.3 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

1.1 General

Department of Defence (Defence) engaged GHD Pty Ltd (GHD) to implement the Per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) (Defence, 2019) at Swartz Barracks (the 'Base'), the Swartz Barracks Management Area and Brymaroo Satellite Site (Brymaroo). OMP results for the Brymaroo site have been reported on separately and will not be referenced any further in this document.

The locations of the Base and Management Area are shown in Figure 1 in Appendix A.

The OMP targets PFAS in a range of environmental media at selected location on-Base, surrounding off-Base areas which includes the Swarts Barrack Management Area and selected locations at Brymaroo.

The OMP for Swartz Barracks (Defence, 2019) outlines that monitoring will be conducted in two six-monthly events, including:

– Annual comprehensive sampling in March/April, including groundwater, sediment and surface water sampling.
– Targeted groundwater sampling in October.

AECOM Australia Pty LTD (AECOM) was previously engaged by Defence to implement the OMP and completed the comprehensive sampling event in April 2024 (AECOM, 2024d). GHD completed the targeted sampling event in October (GHD, 2024b).

To meet the objectives of the OMP, the monitoring was undertaken in accordance with the most current version of the sampling analysis plan (SAQP) (AECOM, 2024a) and SAQP Addendum (GHD, 2024a). This Ongoing Monitoring Report (OMR) has been prepared in accordance with the Defence *Ongoing Monitoring Program Reporting Guidance* issued in February 2024 (Defence, 2024).

1.2 Objectives

Ongoing Monitoring Plan

The objective of the OMP is to set out a program of monitoring to continue to assess the changes in the nature 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 a receptor, or potential future risk to a receptor.

Assessing changes in the distribution, concentration, and transport (pathways and flow rates) of the contaminants against appropriate guideline values provides:

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

This data will be evaluated to determine environmental variability and significant trends in PFAS concentrations. This will inform any changes to the conceptual site model (CSM), the known risk profile and triggers for review of the OMP, PFAS Management Area Plan (PMAP) (Defence, 2019), human health risk assessment (HHRA) (AECOM, 2017b) or ecological risk assessment (ERA) documentation (AECOM, 2018), if required. It will also inform the effectiveness of the implementation of the remediation programs as they progress.

Ongoing Monitoring Report

The objective of the OMR is to assess and interpret the PFAS data and other information collected for the Base, as specified in the OMP, to identify and evaluate:

– Spatial and temporal (including seasonal) variability of PFAS in the environment.
– Changes to sources, transport pathways and/or receptors (the conceptual site model (CSM)).

– Whether the identified changes (if any) trigger an action and/or review of risk management decisions by Defence and Government agencies to protect human health and the environment.

1.3 Scope

The scope of works for this OMR includes assessing the extent of PFAS in the environment, and changes to the distribution of PFAS over the period January to December 2024. It assesses whether any changes alter the understanding of the CSM and the risk profile with respect to PFAS impacts at the Base and surroundings.

This included evaluation of data reported in the following reports:

– Annual Interpretive Report – 2020, PFAS OMP – Army Aviation Centre Oakey (AECOM, 2021).
– Annual Interpretive Report – 2021, PFAS OMP – Army Aviation Centre Oakey (AECOM, 2022a).
– Ongoing Monitoring Interpretive Report – 2022, PFAS OMP Army Aviation Centre Oakey (AECOM, 2024b).
– Ongoing Monitoring Report – 2023, PFAS OMP – Swartz Barracks (AECOM, 2024c).
– Sampling Event Factual Report – April 2024 (AECOM, 2024d).
– Sampling Event Factual Report – October 2024 (GHD, 2024b).

The April 2024 and October 2024 groundwater, surface water and sediment sampling events were conducted in accordance with the SAQP (AECOM, 2024a) and SAQP Addendum (GHD, 2024a), presented in Appendix A.

1.4 Limitations

This report has been prepared by GHD for Department of Defence and may only be used and relied on by Department of Defence for the purpose agreed between GHD and Department of Defence as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Department of Defence arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

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2. Base identification and environmental setting

The following sub sections below describe the location, environmental setting, management areas, source areas and source zones of the Base.

2.1 Base description

A summary of Base identification details is provided in Table 2.1 and the Base locality is shown in Figure 1, Appendix A. The Base layout is provided in Figure 2, Appendix A.

Table 2.1 Base Identification and Setting Summary

Item	Description
Street Address	Orr Road, Oakey, Queensland, 4401
Latitude and Longitude	Approximate centre of the Base: -27.40993108285973, 151.7341968995857
Area	Approximately 850 hectares (ha)
Military Area (Property ID)	QLD_0207
Current Land Use	The Base is currently used by the Defence Force for Army Aviation and has maintained a role as a military facility since 1943. The Base operates as the Army's helicopter training school and is also home to a Republic of Singapore Airforce helicopter squadron. Before 1943 the Base was used for agricultural purposes. The northern part of the Base is the airfield, while the southern part of the Base comprises support services, buildings and infrastructure. Approximately 290 ha of the western portion of the Base is leased for agricultural purposes.
Surrounding Land Use	Land uses surrounding the Base include the following: – North: Wilthorn Kelvinhaugh Road followed by rural properties, which are used for a range of pastoral and agricultural purposes such as grain cropping and limited livestock production. – East: Rural properties, which are used for a range of pastoral and agricultural purposes such as grain cropping and limited livestock production. – South: Residential properties and the township of Oakey, which includes residential, light industrial and business/commercial zoned areas. The Warrego Highway and Western Railway Line are located approximately 3 km and 1 km to the south of the Base. Oakey Creek runs north east to south west immediately south of the Base. – West: Oakey-Cooyar Road, followed by rural properties, which are used for a range of pastoral and agricultural purposes such as grain cropping and limited livestock production.

2.2 Environmental setting

Table 2.2 provides a summary of the environmental setting of the Base.

Table 2.2 Environmental setting

Item	Description
Climate	Based on information from the Bureau of Meteorology Oakey Aero Station #41359 located at the Base and the Oakey scientific information for landowners (SILO): – The average maximum temperature 25.6 °C and the average minimum temperature is 11 °C. – The average annual rainfall is 617.2 mm. – The wettest months occur during summer with relatively dry winter months.

Item	Description
	– Average evaporation peaks at 216 mm/month in December and January and is lowest at 69.2 mm/month in June. – Potential evapotranspiration peaks at 170 mm/month in December and is lowest at 56.3 mm/month in June. – Wind roses indicate that the prevailing wind direction is from the east (32% of the time, following by the west (15%), south-west (14%), north-east (9%), south-east (8%) and north-west (7%). – The higher evaporation compared to rainfall indicates a negative climate balance across the Oakey area.
Topography	The Base is located at an elevation of approximately 400 m Australian Height Datum (AHD), on a relatively flat alluvial flood plain. The regional topography slopes to the west and southwest, with the on-Base topography influenced by the drainage network, which promotes drainage away from runways and ultimately to the south of the Base, via a series of unlinked drains that discharge to Oakey Creek (AECOM, 2024c).
Hydrology	The stormwater network at the Base is an ephemeral system that only flows during and after rainfall events, and dates back to the 1970s. The network consists of a combination of piped systems, overland flow, open drains, kerbs and channels, that make up a total of approximately 33 km of unlined drains and 23 km of pipes (300 mm to 1200 mm diameter) (AECOM, 2024c). The two major catchments at the Base are Doctor Creek Catchment, which comprises of a tributary (Doctor Creek) that collects stormwater from the northern portion of the Base and runs into Oakey Creek, approximately 14 km downstream from the Base. The second catchment is Oakey Creek Catchment, comprising of Oakey Creek (1 km south of the Base), which collects stormwater from all operational areas of the Base via four main drains (Figure 2, Appendix A). – Drainage channel 1: starts at the southwest corner of the airfield and runs in a southerly direction, merging with drain 2 before discharging to Oakey Creek. – Drainage channel 2: runs parallel to Orr Road in a south westerly direction and merges with the drain 1 before discharging to Oakey Creek. – Drainage channel 3: runs parallel to Swartz Road, running south from the southeastern corner of the Base before discharging to Oakey Creek. Some stormwater flows into a private dam, located approximately 800 m south of the Base, with overflow from the dam returning into the drain before discharging into Oakey Creek. – Drainage channel 4: runs parallel with the eastern boundary and runs in a southerly direction before discharging to Oakey Creek. A weir on Oakey Creek forms a semi-permanent water body that collects runoff from the surface water drains discharging from the Base (AECOM, 2024c).
Geology	The Base is part of the Clarence-Moreton Basin, with sedimentary rocks from the Late Triassic to Late Jurassic age forming the basement rocks of the region. The basement rocks consist of sandstone, siltstone, mudstone and coal. The Walloon Coal Measures is the uppermost formation of the Clarence-Moreton Basin, which is overlain by extensive areas of unconsolidated younger alluvial sediments such as the Oakey Creek Alluvium and variably in areas by the Main Range Volcanics. The geological stratigraphy is presented below (AECOM, 2024c): – Cenozoic (Quaternary) Period Oakey Creek Alluvium: • Lithology – gravel, sand, silt and clay. • Variable thickness between 20.8 metres (m) and 75.5 m below ground level (bgl). This is the main aquifer for local groundwater extraction. – Cenozoic (Tertiary) Period Main Range Volcanics: • Lithology – alkali-olivine basalt, minor tuff, sandstone and mudstone. • Variably encountered this variable thickness. It has hydraulic connection with the Alluvium. – Mesozoic (Jurassic) Period Walloon Coal Measures: • Lithology – Thin-bedded claystone, shale, siltstone, lithic and sublithic to feldspathic arenites, coal seams and partings, and minor limestone.

Item	Description
Hydrogeology	The main aquifer beneath the Base is the Oakey Creek Alluvium (OCA) aquifer, composed of sand, silt, gravel and clay. Typical of alluvial aquifers, the OCA is highly heterogeneous. Previous reports have indicated the OCA aquifer has two hydro stratigraphic units - an upper layer which tends to have a higher clay content, overlying a lower layer which has a higher percentage of sands and gravels, with grain size generally increasing with depth. Due to this difference in texture, the upper OCA generally has a lower hydraulic conductivity and lower groundwater yields than the lower layer, making the lower OCA the primary groundwater resource in the Oakey area (AECOM, 2016). JBS&G (JBS&G, 2024a) reported that the overall Oakey Creek Alluvium is highly variable and interconnected and did not define an upper and lower aquifer within this unit. The capacity of the alluvium to store and transmit groundwater is variable both vertically and laterally across its extent, due to the discontinuous sequences of sand, silt, gravel and clay. Localised perched zones are present in some areas of the upper OCA due to clayey lenses isolating sandy horizons. These localised water bearing zones within the OCA are unconfined to semi-confined in nature (AECOM, 2024c). Typically, the maximum depth of the upper OCA is approximately 18 to 20 m bgl) at the base. With the base of the lower OCA at least 50 m bgl. A basal clay layer (transition zone) exists below the sand and gravels of the lower OCA and above the basement rock. Forming an aquitard, between the OCA and the underlying bedrock, that is a combination of the OCA alluvial clays and weathered underlying Main Range Volcanics (MRV) or Walloon Coal Measures (WCM) (AECOM, 2016).
Groundwater and surface water interaction	The groundwater flow typically follows the topography, with flow within the OCA generally west to south-west. Both natural and anthropogenic sources recharge and discharge the OCA. With natural sources of recharge including rainfall, losses from rivers and inflow from other aquifers. Anthropogenic sources of recharge to the catchment include, irrigation, unlined stormwater drains, uncontrolled surface water flows, and point sources, such as dams or ring tanks. Groundwater is discharged from the OCA predominately via groundwater extraction for irrigations, which has been occurring on a large scale since the 1970s. It also discharges via leakage to regional (bedrock) aquifers, evapotranspiration (only where shallow groundwater occurs within the alluvium, ≤ 2 m), baseflow to surface drainages (downgradient of the Base, at the Oakey Creek confluence with the Condamine River), and throughflow within the alluvial aquifer downgradient (AECOM, 2017a).
Groundwater and surface water use	The Queensland Department of Local Government, Water and Volunteers manage the groundwater within the alluvium aquifer under the Oakey Creek Groundwater Management Unit. The Department of Regional Development, Manufacturing and Water (DRDMW) Groundwater Database records indicate the OCA is used for irrigation, domestic purposes, livestock watering and edible gardens, and historically, for town water supply during extreme dry periods.
Ecology	The Oakey area is highly modified and mostly cleared, with the Oakey Creek corridor largely consisting of landscaped parkland. There is limited remnant vegetation at the base and scattered within paddocks and road reserves, consisting mainly of disturbed poplar box woodland. However, several ecological receptors were identified, including: – Modified pasture and grazing land that could be consumed by livestock. – Livestock. – Riparian and terrestrial vegetation associated with waterways, drainage lines and wetlands. – Remnant woodland, parkland, roadside vegetation and residential gardens. – Fish species and other aquatic biota. Including the Murray cod and silver perch, which have been confirmed to occur within Oakey Creek by the Queensland Department of Agriculture and Fisheries, due to regular stocking since the late 1980s to enhance local recreational fishing opportunities. These species are listed as threatened species under the Environment Protection and Biodiversity Conservation Act 1999. – Higher order fish eating birds and raptors (AECOM, 2017a).

2.3 Management areas

In 2016, prior to the establishment of a PMAP, the Swartz Barracks Management Area was established that comprised three management zones (see Figure 3, Appendix A).

- **Management Zone 1 (MZ1):** this zone is located immediately to the south and southwest of the Base. It has the highest perfluorooctane sulfonate (PFOS) + perfluorohexane sulfonate (PFHxS) concentrations in groundwater in the Management Area. This is due to its closer proximity to the Base and potential downwards migration of PFAS from surface water in drainage channels 1 and 2.
- **Management Zone 2 (MZ2):** this zone is located further to the south and southwest of the Base. It has higher PFHxS + PFOS concentrations in groundwater in comparison with MZ3, resulting from a combination of impacted groundwater flowing to the south and west from the Base together with downwards migration of PFAS-impacted surface water from the drains leaving the Base.
- **Management Zone 3 (MZ3):** located outside MZ1 and MZ2 and within the remainder of the Management Area. PFAS was not detected by the laboratory in the majority of groundwater samples collected from groundwater monitoring bores in this Management Zone.

2.4 Source zones

The Environmental Site Assessment (ESA) (AECOM, 2017a) identified eight PFAS source areas at the Base (which are shown in Figure 2, Appendix A), that were incorporated into the PMAP, as follows:

- The Former Fire Training Ground (CSR_QLD_000415)
- The Former Fire Station and Foam Training Area (CSR_QLD_000457)
- The Current Fire Training Ground (CSR_QLD_000609)
- The Former Fuel Compound and Hot Refuel Area (CSR_QLD_000458)
- Aqueous Film Forming Foam Settling Tank (C59 tank)
- AFFF Storage and Decanting Area (CSR_QLD_000611)
- AFFF Settling Tank (S11) and AFFF Storage Tank (S12) (CSR_QLD_000463)
- The Hot Refuel Area and AFFF Settling Tank (CSR_QLD_000610)

GHD has reviewed Defence's Contaminated Sites Registers (CSRs) for Swartz Barracks (0207) which were exported from the Defence Garrison and Estate Management System (GEMS). The CSRs have a risk ranking associated with each area, which has been assigned via the contamination risk assessment tool (CRAT) which takes into consideration the contamination profile including PFAS, hydrocarbons and other relevant contaminates.

GHD have only considered CSRs where PFAS is the primary COPC, and these are summarised in Table 2.3.

Table 2.3 CSRs associated with PFAS

Defence CSR ID (legacy ID)	Name / description	Overall CSR Risk Ranking on CRAT	Assessment status (CRAT year of assessment)	Recommended Action	Comments
CSR_QLD_000415	Former Fire Training Area where AFFF discharged to ground	Medium	Stage 4 – Remediation / Management	Stage 4 – Remediation / Management	Remediation completed in 2022, Long Term Management Plan in place
CSR_QLD_000453	Maintenance Hangar (S2)	Medium	Stage 2 – Detailed Site Investigation	Stage 2 – Detailed Site Investigation	Source considered to be from CSR_QLD_000463
CSR_QLD_000457	Former Fire Station Where AFFF Was Discharged To Ground	Very High	Stage 2 – Detailed Site Investigation	Stage 2 – Detailed Site Investigation	Area underwent development for a new air control tower between 2018 and 2019

Defence CSR ID (legacy ID)	Name / description	Overall CSR Risk Ranking on CRAT	Assessment status (CRAT year of assessment)	Recommended Action	Comments
CSR_QLD_000458	Former Fuel Farm And Hot Refuel Area In F1 Where AFFF Was Discharged To Ground	Very High	Stage 2 – Detailed Site Investigation	Stage 2 – Detailed Site Investigation	Recommended referral to PFASIMB for further investigation
CSR_QLD_000462	Leaks From USTs: PFAS From Tank C59 And Hydrocarbons From Tank C60	Very High	Stage 2 – Detailed Site Investigation	Stage 3 – Risk Assessment / Remediation Design	Remedial Action Plan (RAP) being prepared for Tank 60, (GHD understand this has not yet occurred and is not currently within GHD scope of work) no comment on Tank 59
CSR_QLD_000463	USTs S11 And S12 Where AFFF May Have Been Discharged Or Leaked To Ground	Very High	Stage 2 – Detailed Site Investigation	Stage 2 – Detailed Site Investigation	Recommended referral to PFASIMB for further investigation
CSR_QLD_000609	Fire training facility in Area D2	Very High	Stage 2 – Detailed Site Investigation	Monitoring	Liquid waste can drain to C59 tank or be diverted to stormwater
CSR_QLD_000610	AFFF recovery tank (A83) and hot refuel area in A2	Very High	Stage 2 – Detailed Site Investigation	Monitoring	Elevated groundwater concentrations may be due to an up-gradient source such as the former fire training area
CSR_QLD_000611	AFFF decanting and mixing area (D16)	Very High	Stage 2 – Detailed Site Investigation	Monitoring	Considered to be a source of PFAS contamination in soil and groundwater
CSR_QLD_000612	Bulk Fuel Tanker parking (B69)	Medium	Stage 1 – Preliminary Site Investigation	Stage 2 – Detailed Site Investigation	Limited information – two foam fire extinguishers
CSR_QLD_000669	Stockpile 63 - PFAS Impacted Soil	Medium	Stage 2 – Detailed Site Investigation	Stage 4 – Remediation / Management	Two uncovered, unbunded stockpiles from unknown construction projects

3. Sampling and analytical methodology

3.1 Sampling locations

The sampling events conducted in April 2024 (AECOM) and October 2024 (GHD) included the collection of selected groundwater, surface water and sediment samples from across the Management Area. On-Base and off-Base groundwater sampling locations at the Base are shown in Figure 4 and Figure 5, respectively, in Appendix A[1]. Information on the aquifers relevant to each well is presented in Table 1, Appendix B. Surface water and sediment sampling locations in the Swartz Barracks Management Area are shown in Figure 6 in Appendix A.

3.2 Summary of OMP work April 2024 and October 2024

A summary of the monitoring works implemented as per the most recent version of the SAQP (AECOM, 2024a) and SAQP Addendum (for October 2024 only) (GHD, 2024a) between April 2024 and October 2024 is summarised in Table 3.1.

Table 3.1 Summary of OMP work in 2024

	April 2024	October 2024
Monitoring dates	02-12 April 2024, 3 May 2024	1-11 October 2024
Groundwater		
On-base – SAQP	34 locations in the Oakey Creek Alluvium aquifer.	34 monitoring wells in the Oakey Creek Alluvium aquifer.
On-base – SAQP Addendum	-	15 monitoring wells in the Oakey Creek Alluvium aquifer.
	-	2 monitoring wells in the underlying aquifers (described as the transition zone/deeper clay by JBS&G (JBS&G, 2024a)).
Off-Base – SAQP	20 monitoring wells and 17 residential bores in the Oakey Creek Alluvium aquifer.	5 monitoring wells and six residential bores in the Oakey Creek Alluvium aquifer.
	7 monitoring wells in the underlying aquifers (Walloon Coal Measures or Main Range Volcanics).	1 monitoring well in the underlying aquifer (Walloon Coal Measures).
Surface Water	19 locations from drainage channels, Oakey Creek, Doctor Creek and Westbrook Creek.	-
Sediment	22 locations from drainage channels, Oakey Creek, Doctor Creek and Westbrook Creek.	-

3.3 Sampling and analysis methodology

Refer to the SAQP (AECOM, 2024a) and SAQP Addendum (GHD, 2024a) (Appendix C) for the sampling methodology, data quality objectives (DQOs) including quality assurance (QA) and quality control (QC) parameters for field and laboratory programs. Refer to the factual reports (Appendix D) for QA/QC discussion and fit for purpose data.

[1] Note that some off-Base sampling locations are not shown for privacy reasons.

3.4 Deviations from SAQP

The works undertaken over the monitoring period complied with the version of the SAQP applicable at the time of the monitoring, and SAQP addendum (GHD, 2024a), with some minor exceptions as detailed in Section 3.4.1 and 3.4.2. Deviations from the sampling program specified in the PMAP (Defence, 2019) are documented in the SAQP (AECOM, 2024a).

3.4.1 April 2024 sampling event

Table 3.2 lists the deviations from the SAQP (AECOM, 2024a) during the April 2024 sampling event.

Table 3.2 Deviations from SAQP (AECOM, 2024d)

SAQP (AECOM 2024)	April 2024 sampling event deviation	Impact on Ongoing Monitoring Program
Collection of groundwater samples at 81 locations at the Base	A total of 75 out of the 81 groundwater samples specified in the SAQP were collected during the April 2024 sampling event. **Access not granted** The groundwater samples from off-Base monitoring wells MW296 and MW297 were unable to be collected as the stakeholders did not provide access permission. **Dry Wells** Monitoring well MW289 was dry and a sample could not be collected. **Physically inaccessible** Monitoring well MW279 could not be located and is likely destroyed. Monitoring well MW270 was blocked with roots and the sampling equipment could not be retrieved. **Well replacement** Monitoring well MW242 has been destroyed and MW243 was sampled as an alternative given its proximity to MW243 and its location near the site's western boundary.	The non-sampling of MW270, MW279, MW289, MW296, MW297 reduces the spatial coverage of the groundwater monitoring network at locations to the southwest and south of the Base. As monitoring well MW289 was dry, there is no data on groundwater quality in the deeper aquifer at this location. However, the fact it was dry provides useful information on the variability of standing water levels (SWLs). MW243 monitors a shallower depth interval (3-6 mbgl) compared to MW242 (17-20 mbgl) The perched water in MW243 is not representative of deeper groundwater in the Alluvium aquifer at this location. Further attempts will be made to locate MW279. If this cannot be achieved, a replacement well is recommended. MW270 is compromised such that a replacement well is recommended.
Collection of water quality parameters	Field quality parameters not collected for MW242 (insufficient water volume to collect parameters).	The non-collection of sampling measurements in this well is of low significance as a large dataset is available for these wells and nearby wells.
Collection of surface water from 22 sampling locations	A total of 19 out of 22 surface water samples were collected. Three surface water samples from drainage channel 3 were not collected as this channel was dry. Samples SW019, SW021 and SW063 were not collected.	The non-presence of water at these locations indicates that no PFAS migration in surface water was occurring at the time of the sampling event. As multiple surface water locations are dry for drainage channel 3, there is limited understanding on PFAS concentrations in surface water at the point of time of sampling for drainage channel 3. However, the observations provide important information on seasonal flows, to inform the CSM.

3.4.2 October 2024 sampling event

The October 2024 sampling event was completed in general accordance with:

– The SAQP (AECOM, 2024a).
– SAQP Addendum (GHD, 2024a).
– GHD's health and safety protocols.
– GHD's standard operating procedures for field work, which have been developed in accordance with QLD contaminated land guidance.
– Directions as provided by the Base.
– Directions as provided by private landholders to access their properties.

Table 3.3 lists the deviations from the SAQP (AECOM, 2024a) and SAQP addendum (GHD, 2024a) during this sampling event.

Table 3.3 Deviations from the SAQP during October 2024 sampling event

SAQP (AECOM 2024)	GHD approach outlined in SAQP Addendum (GHD 2024)	October 2024 Sampling Event	Impact on Ongoing Monitoring Program
Collection of groundwater samples at 47 locations	Collection of groundwater samples at 17 additional wells recently installed by JBS&G following the same methodology as the SAQP.	A total of 57 groundwater samples were collected out of the 64. **Access not granted** MW056 was not sampled as the private property at 13 Campbell Street had been sold and GHD does not have contact details of the new owners. A letter was dropped in the mailbox. **Physically inaccessible** MW222 and MW223 were not sampled because these wells had been covered in asphalt during recent resurfacing works at the Base. MW255 could not be opened as the keyholes had been stripped (Allen key head). **Dry Wells** MW232 was not sampled as it was effectively dry and there was insufficient water to collect a sample. Monitoring well MW242 had been destroyed and adjacent well MW243 was scheduled for sampling as an alternative to assess contamination near the western boundary. MW243 has a total depth of 6.8 m below top of casing (mbtoc), i.e. screened at a shallower depth than MW242, and was dry. MW567 was not sampled as it was effectively dry and there was insufficient water to collect a sample. **Publicly accessible wells** There are 16 publicly accessible monitoring wells located in road reserves that are identified in the OMP. None require any physical access to be facilitated.	**MW056** Not being able to access this private bore reduces information on the potential migration of PFAS in groundwater in the Oakey Creek Alluvium aquifer in the southwestern extent of Management Zone 2. Action: GHD will continue efforts to contact the owner. **MW222 and MW223** The location is directly downgradient of the current fire training area, however MW221, which is part of the sampling program, further down gradient, is screened at a similar depth and targets the same aquifer and is considered adequate for assessing groundwater quality down gradient of the current fire training area. Action: SAQP/OMP to be updated to remove MW222 and MW223. **MW255** The non-sampling reduces information on the potential migration of PFAS in groundwater in the Oakey Creek Alluvium aquifer in the southwestern portion of the western boundary of Management Zone 2. Action: GHD will drill out and replace keyholes in April 2025. **MW232** This well has historically had low water levels and been sampled with a bailer. It is anticipated that following the wet season, a sample will be able to be collected in April 2025.

SAQP (AECOM 2024)	GHD approach outlined in SAQP Addendum (GHD 2024)	October 2024 Sampling Event	Impact on Ongoing Monitoring Program
		GHD contacted Toowoomba Regional Council (TRC) to renew access beyond March 2025 and that request has not been receipted to date. The request included clarification regarding which of those 16 bores are considered TRC assets. TRC communicated to GHD on 4 October 2024 that the following bores are potentially on the TRC bore register. The OMP bore names are not consistent with the TRC bore register, therefore matching of coordinates was used by TRC to cross reference. MW282 (potentially one of three landfill leachate bores), MW274 or MW275 (potentially Bore 5) and MW276 (potentially Bore 7). No further correspondence has been received.	**MW242 and MW243** MW242 is lost, and MW243 was scheduled for sampling as an alternative. While MW243 would not be able to replace the data captured from MW242, given its shallower screening, it may be a useful location to include in the OMP to assess shallower PFAS concentrations at this boundary location. It is anticipated that following the wet season, a sample may be able to be collected in April 2025. **MW567** It is anticipated that following the wet season, a sample will be able to be collected in April 2025. Action: Re-sample in the April 2025 and October 2025 rounds. Action: All dry wells will be attempted to be sampled in April 2025. **Publicly accessible wells** GHD has been instructed by Defence to route all correspondence to TRC through the Defence team with regards to future access to these locations. The next sampling round scheduled for April 2025, will need to be considerate of any access constraints as instructed by Defence.
HydraSleeve™ deployment	At the completion of the October sampling event, HydraSleeves™ were to be installed in all relevant wells in preparation for the April 2025 OMP sampling round	Hydrasleeves™ were not installed in the following wells for April 2025 due to time and/or access constraints: MW265, MW266, MW274, MW275, MW278, MW279, MW280, MW281, MW282, MW290, MW291, MW292, MW293, MW296, MW297, MW270S, MW270D, MW271S, MW271D, MW272S, MW272D, MW273S, MW273D, MW274S, MW274D, MW567, MW575, MW255	This does not impact the outcome of this assessment but will need to be considered in the planning of the April 2025 monitoring round to ensure Hydrasleeves™ are installed prior to sampling.

SAQP (AECOM 2024)	GHD approach outlined in SAQP Addendum (GHD 2024)	October 2024 Sampling Event	Impact on Ongoing Monitoring Program
Sample analysis – All primary samples will be submitted for PFAS extended suite using the standard levels of detection.	While the SAQP states that samples should be analysed for the PFAS extended suite, the results presented in the previous reports are for the standard PFAS suite (28 analytes). Given that the primary PFAS of concern are covered with the standard PFAS suite, GHD will also adopt the standard PFAS suite, noting that for ALS this is currently 31 analytes. Samples will be analysed using standard levels of detection.	Samples were analysed for the standard PFAS suite (31 analytes) using the standard levels of detection.	Given that the primary PFAS of concern are covered by the standard PFAS suite there are not considered to be any impacts on the OMP.
QC samples – the SAQP only outlines requirements for duplicates and rinsates. There is no requirement for field blanks or trip blanks to be collected.	GHD will collect QA/QC samples as follows, as this is considered standard industry practice, and will be consistent across all SAQPs and sampling conducted by GHD: – Duplicates – 1 in 10 samples – Triplicates – 1 in 10 samples – Rinsates – 1 per day of sampling off reuseable equipment – Trip blanks – 1 per laboratory batch – Field blanks – as required on new equipment.	QC samples collected as outlined in the SAQP Addendum.	These changes are not considered to impact the OMP.

4. Quality assurance and quality control

Data validation pertaining to the data in this report has been previously completed and discussed within the individual factual reports listed below:

– Sampling Event Factual Report – April 2024. PFAS OMP – Swartz Barracks (AECOM, 2024d).
– Sampling Event Factual Report – October 2024. PFAS OMP – Swartz Barracks (formerly known as Army Aviation Centre Oakey) (GHD, 2024b).

A summary of the field (Table 4.1) and laboratory (Table 4.2) QA/QC results are provided below.

Table 4.1 Field QA/QC Assessment

QA/QC Item	Acceptability criteria	Comments / Assessment
QAQC program	*Field and inter-laboratory duplicates:* – 1 per 10 samples *Rinsates:* – 1 sample per piece of reusable equipment per day *Trip blanks:* – 1 per lab batch *Field blank:* – As required on new equipment	Field quality samples for both sampling events were collected at the recommended rate outlined in the SAQP and SAQP Addendum for both the April 2024 and October 2024 sampling events.
Relative Percentage Difference (RPD) on field/inter-lab duplicate samples.	The RPDs will be assessed as acceptable if less than or equal to 30% as per the National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM) Schedule B3. Where the results shows greater than 30% difference a review of the cause will be conducted (NEPC, 2013).	For the majority of RPD exceedances, the primary and duplicate/triplicate results are in the same order of magnitude[2] and the discrepancy is unlikely to have material impact on the results. Exceedances were mainly associated with inter-laboratory duplicates, indicating that differences may be due to discrepancies in analytical approaches between laboratories. Overall, these discrepancies are not considered likely to affect the outcome of the assessment or the reliability of the results.
Quality parameter field measurements and calibration	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation reduction potential (ORP), pH and observations of water quality will be recorded for all groundwater and surface water samples.	Field parameters and observations of water quality were recorded for all groundwater and surface water samples. Equipment calibration certificates were provided in the equipment packaging and sighted prior to use in the field.
Decontamination procedures	Non-dedicated equipment which comes into contact with surface water, groundwater or sediments (i.e. interface probe, water quality meter probe and trenching shovel) will be decontaminated by being cleaned with a PFAS-free detergent and PFAS-free deionised water supplied by the analytical laboratory.	All non-dedicated equipment which came into contact with water or sediments was cleaned in between each sample location.

[2] Order of Magnitude refers to something decreasing or increasing by multiples of ten. For instance, an increase from 10 to 100 is an 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 represent a significant change 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.

QA/QC Item	Acceptability criteria	Comments / Assessment
Sample collection, handling and transportation procedures	Sample collection, handling, and transportation procedures from the SAQP were followed.	Samples were collected directly into laboratory supplied bottles from the sources. Sample collection included the use of new PFAS free disposable gloves for the collection of each sample location. Samples were placed in ice filled eskies and submitted to NATA accredited laboratories under chain of custody (COC) documentation. The sample receipt notifications and laboratory transcripts indicated that the samples were between 4.7 and 11.3 °C and ice was present. All samples were provided to the laboratory with adequate time to commence analysis in accordance with relevant holding times.

Table 4.2 Laboratory QAQC assessment

QA/QC Item	Comment / Assessment
Appropriate methodologies used for sample analyses	All laboratory transcripts were NATA stamped and signed by a NATA signatory. The primary laboratory used in this investigation was Australian Laboratory Services Environmental (ALS) Brisbane, Eurofins MGT Brisbane was the secondary laboratory. Data presented in the laboratory QA/QC reports were considered adequate in demonstrating the precision and accuracy of the methods used to analyse field samples.
Appropriate LORs	In laboratory report EB2432583 the LORs for particular samples and particular analytes were adjusted due to matrix interference or high-level contaminants requiring dilution.
Laboratory QA/QC plan	Copies of signed CoC forms and the analytical methods used are presented in Appendix D of the April (AECOM, 2024d) and October (GHD, 2024b) 2024 Sampling Event Factual Reports (Appendix D). Laboratory quality control samples included laboratory control samples, internal duplicates, matrix spike and method blanks. The types of QA/QC samples analysed by the laboratory were considered appropriate to assess the precision and accuracy of the laboratory methods used.

All data collected from the 2024 sampling events including the field parameter results, have been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2021) requirements, in particular, Annex L Guidance on Data Management.

Based on a review of the QA/QC performance results, it is considered the analytical dataset collected in this monitoring round is appropriate for assessing changes to the distribution of PFAS over the 2024 monitoring period.

Refer to the sampling event factual reports in Appendix D for further information.

5. Assessment criteria

The guidance documents used to assess the data from April 2024 and October 2024 were:

– PFAS NEMP (HEPA, 2020)[3].
– ASC NEPM (NEPC, 2013).
– Department of Health, 2019. Health Based Guidance Values for PFAS for use in site investigations in Australia. April 2017 [updated September 2019].
– National Health and Medical Research Council (NHMRC), 2019. Guidance on PFAS in Recreational Water. August 2019 (NHMRC, 2019).

The adopted PFAS screening criteria used to assess the data generated as part of the Ongoing Monitoring Program are presented in Table 5.1 below.

Table 5.1 Summary of adopted screening criteria

Pathway	Compound	Criteria	Comment/reference
Human Health Receptor			
Drinking water - groundwater	PFHxS + PFOS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). Recreational guidelines have not been considered in this monitoring event as all samples were collected from groundwater. *All groundwater results were compared to these criteria.*
	Perfluorooctanoic acid (PFOA)	0.56 µg/L	
Recreational use – surface water	PFHxS + PFOS	2 µg/L	The values are from the PFAS NEMP (HEPA, 2020) and (NHMRC, 2019). Recreational guidelines were not considered in the October 2024 monitoring event as all samples were collected from groundwater. *All April 2024 surface water results were compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	The values are from the PFAS NEMP (HEPA, 2020). The 99% level of protection has been applied for slightly to moderately disturbed ecosystems, including groundwater where there is the potential for groundwater to discharge to a surface water system. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. For the purposes of preliminary screening of analytical water results, the standard laboratory LOR will be adopted rather than sole use of the criteria value, based on historical results. *All groundwater results will be compared to these criteria.*
	PFOA	19 µg/L	

Guidelines are not developed for PFAS in sediment in Australia. Often soil criteria are used as a screening criterion for sediments. However, sediments by definition, refer to material under water and therefore, the exposure scenario for sediments is different to soil. Consequently, soil criteria are not considered appropriate. The collection of sediment data is useful in understanding PFAS mass distribution and risk to aquatic biota.

[3] Version 3.0 of the PFAS NEMP was published in March 2025. This has not charged the values for screening criteria used for the April and October 2024 sampling events.

6. Contextual and ancillary information

Defence is undertaking a range of management activities at the Base to remove PFAS from the environment and limit PFAS migration pathways, so far as reasonably practicable. These are described in the subsections below based on information provided by Defence.

6.1 Historical activities (2018-2023)

6.1.1 Drain excavation and off-base disposal

In 2018 Defence excavated sediment from open drains at the Base to reduce the migration of PFAS contamination from the sediment to surface water and groundwater. Approximately 12,000 m^3 of sediment was excavated and disposed of in an off-Base disposal facility in accordance with Queensland guidelines (GHD was not provided with results or a report for this work). The sediment was replaced with new material. See Figure 2, Appendix A for the location of the drainage channels. The impact of these remediation activities on sediment concentrations is further discussed in Section 8.4.3.

6.1.2 Soil remediation at the former fire station

Between 2018 and 2019 the area of the former fire station was redeveloped with a new Air Traffic Control Tower built. PFAS contaminated soil excavated during the construction of the foundations of the new building was treated prior to off-Base disposal in accordance with Queensland guidelines (GHD was not provided with results or a report for this work). The location of the former fire station is shown on Figure 2, Appendix A. The impact of these remediation activities on groundwater concentrations is further discussed in Section 8.3.1.

6.1.3 Soil remediation at the former fire training area

Between April and November 2021 soil remediation activities were conducted at the FFTA in the north area in accordance with the remediation action plan (WSP, 2019). The objective of the remediation was to reduce to the extent practicable the mass of PFAS in soil at the former fire training area (Figure 2, Appendix A). The remediation works included the excavation of approximately 4,600 m^3 of PFAS contaminated soils from varying depths (between 0.3 and 1.5 metres below ground level) across the source area followed by stabilisation and landfill disposal (GHD, 2022). The excavation was infilled with benign material that was compacted in a manner so that it acts as a low permeability layer that restricts rainfall infiltration into residual contamination in underlying soils. The impact of these remediation activities on groundwater concentrations is further discussed in Section 8.3.1.

6.1.4 Water treatment plants

Two water treatment plants (WTPs) have historically been operated at the Base (AECOM, 2024c):

– One of the WTPs utilises surface-active foam fractionation technology. Operation of this system commenced in 2019 by OPEC Systems Pty Ltd (OPEC). In 2021/2022 the capacity of this system was upgraded to treat up to 4 litres per second, or 2.4 million litres per week of PFAS impacted groundwater, more than was being treated by both WTPs prior to the upgrade. The OPEC system is understood to remove approximately 1,300g of PFAS from groundwater each year (JBS&G, 2024b).
– The second WTP utilised anionic resin technology and was operated between 2018 and 2022 by ECT2 Pty Ltd (ECT2). This system treated groundwater extracted from the Former Fire Station and Foam Training Area and was decommissioned in the 2022 due redundancy once the OPEC WTP system was upgraded.

6.1.5 PMAP delivery

A multi-year program of work was commenced in 2020 and was completed in December 2023. The program included targeted soil investigation (AECOM, 2022b) at six source areas to characterise the nature and extent of contamination in soil at these locations. Based on the findings, a soil remediation action plan was developed in 2023 for four of the source areas (AECOM, 2023a), followed by a technical specification (AECOM, 2023b). A PFAS Mass Flux Study (AECOM, 2023c) was also completed in 2023 to assess the mass of PFAS leaving the Base through groundwater and surface water drainage channels.

6.2 Current activities

During the monitoring period one water treatment plant was in operation (refer to Section 6.2.1). An array of PMAP delivery documents were prepared in 2024 as part of the PMAP delivery project (refer Section 6.2.2). These are described below.

6.2.1 Water treatment plant

The OPEC WTP system was upgraded in 2021/2022 (refer to Section 6.1.4) and is now treating groundwater extracted from both the Former Fire Station and Foam Training Area as well as the Current FTA. Following treatment, the water is irrigated for infiltration on-Base.

6.2.2 PMAP delivery

PMAP Delivery programs of works that were completed in 2024 included:

– Groundwater Field Investigations Report (JBS&G, 2024a).
– Quantitative Conceptual Site Model (JBS&G, 2024b).
– Soil Remediation Design Review (GHD, 2024c).
– Soil Remediation Design – Comparative Options Assessment (GHD, 2024d).

The JBS&G investigation works (JBS&G, 2024a) were undertaken to further characterise PFAS concentrations in groundwater at the western boundary of the Base and determine hydrogeological parameters for future mass flux assessment. The quantitative CSM (JBS&G, 2024b) summarises these recent works, along with information from historical reports into one document that aims to communicate key issues to stakeholders. Including an assessment of historical and future migration of PFAS beyond the Base. The key outcome of the JBS&G program of works noted that flux and plume migration rates are concentrated in relatively small zones of the geology. This further supports the heterogeneity of the hydrogeology in the area and the need for further assessment to increase understanding of PFAS migration.

To support the remediation program for 2025, GHD completed the soil remediation design review (GHD, 2024c) and Comparative Options Assessment (GHD, 2024d). These documents support the remediation design reports that will be completed as part of the remediation program for 2025.

6.3 Current and future planned activities

Construction projects that are currently occurring or are planned at the Base potentially requiring management of PFAS contaminated soil are identified in Table 6.1 below. This information was provided by Estate Maintenance and Operation Services for Swartz Barracks in January 2025. The construction projects listed below are likely to have involved the management of minor volumes of soil containing PFAS associated with surface works rather than major excavations, however these volumes have not been defined.

Table 6.1 Summary of current and planned activities at the Base

Management	Projects	Details	Locality of project	Potential to remove volumes of soil	Contractor	Dates
Downer Delivery	EST05587 – Type 1A Panel Upgrade	Type 1A Panel Upgrade works for Swartz Barracks.	Various buildings	None	To be awarded (TBA)	Construction beginning in Jan 2025
	EST09133 – B073 (GEMS BU 30/5520) AAVNTC upgrade	Works to bring facility up to standard for DSN.	Training centre buildings	None	TBA	05/08/2024 to 24/09/2024
	EST09581 – 0207/B039 (GEMS BU 30/5491)	The provision of a hard standing & cover, near the gymnasium precinct (adjacent Squash Courts if possible), to house Alpha Rig equipment.	Various buildings	Possible	Apollo	TBA
	EST09632 – AATC Oakey 44WG Transmitter	The main recommendation from The Report is for a fleet wide replacement of antenna gantries and transmitter buildings.	Various buildings	Possible	TBA	TBA
	EST09675 - SFW DD HC Outdoor Areas (B0109 Oakey)	Construction of a new outdoor eating area off the Oakey Health Centre.	Oakey Health Centre	Possible	TBA	TBA
	EST09667 - Swartz Barracks Pilot Lighting System Works	Carry out works to upgrade the PAALC to an automatic operation to enable the PAALC to automatically restore power after a power outage event.	Various buildings	None	TBA	TBA
Capital Facilities and Infrastructure	EST04122 P1005 – Airfield Maintenance Works Program	Asphalt resurfacing	Runway	None	Fulton Hogan	6/11/2023 to 15/12/2023
	ESTL04507 - AAPoW-Oakey-Swartz Barracks	TBA	TBA	Unknown	TBA	09/12/2024 to TBA

Management	Projects	Details	Locality of project	Potential to remove volumes of soil	Contractor	Dates
PDS Support	EST08212 - Oakey Roads & Carpark Resurfacing	Pavement upgrades in various areas of the Base.	Roadways	None	McIlwain	Start date 2/11/2023
	EST08212 - Oaky Washpoint and undercar wash installation	Design and construction of washpoint and installation of undercar wash for Swartz Barracks.	Washpoint	None	McIlwain	In design
	EST09038 - Swartz Barracks Estate Base Plan	Works including electrical, ICT and hydraulics.	Various buildings	None	TBA	TBA
	EST09409 - Swartz Barracks Oakey L121 Pavements 0207 / Gates 04 & 06	Pavement upgrade and road widening works.	Roadways	None	Shamrock Civil	03/10/2023 to 22/11/2024
	EST09921 - Swartz Barracks Hangar Refurbishment - 0207/ C001, C002, C004, C005, C028, C068	Renewal or replacement of existing building elements/components/systems, various hangar upgrade works.	Hangars	None	TBA	TBA
	EST10508 - JP9347 Program Phase 1 Works	Upgrade of Defence's current Joint Data Networks.	Various buildings	None	TBA	TBA

TBA – indicates where the schedule for activities or the contractor to complete the activities has yet to be awarded/programmed.

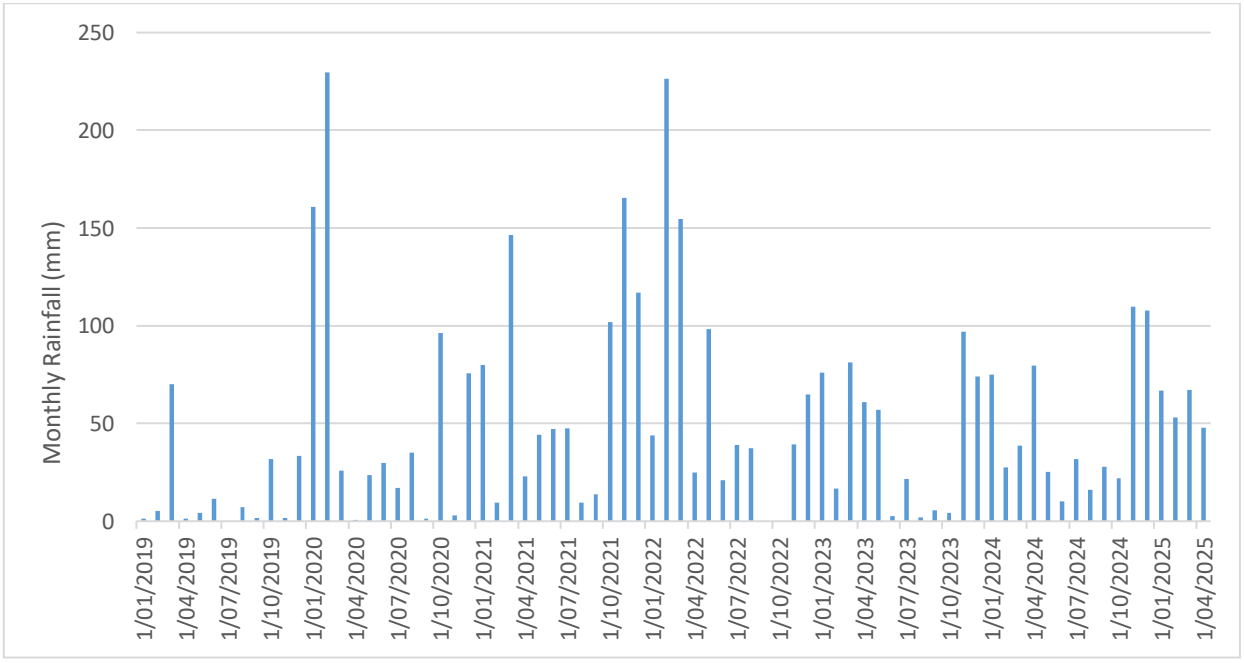
6.4 Weather conditions

Table 6.2 summarises the rainfall received during the monitoring period compared to the average rainfall as recorded between 1973 and 2024 (BOM, 2024), which shows that rainfall exceeded the long-term average for three of the past 12 months. Rainfall over the preceding 12 months was 87.5% of the long-term average, indicating a somewhat drier than normal average annual period.

Table 6.2 Rainfall during monitoring period

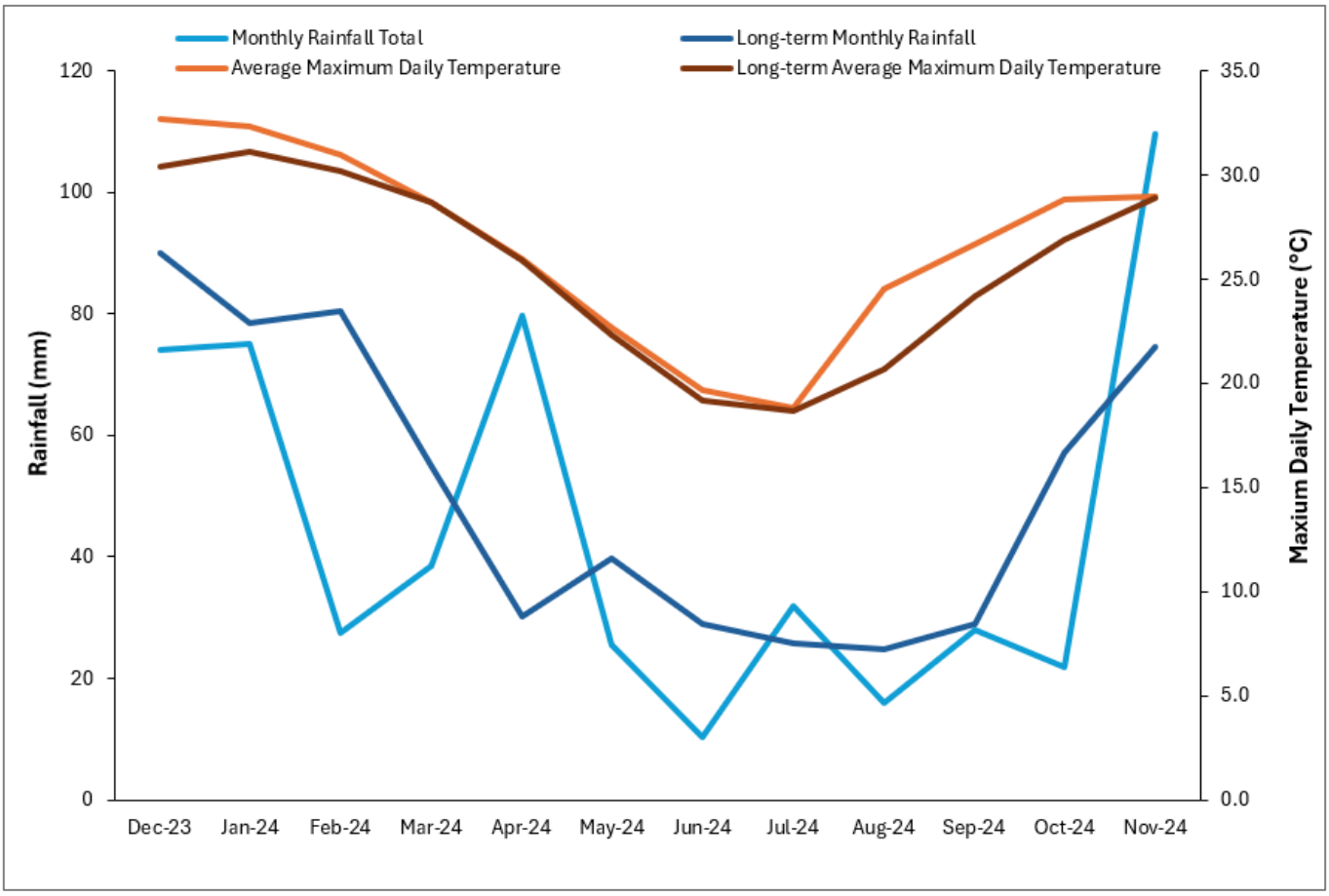
Sampling event	Rainfall recorded at weather station 041359 (mm) – December 2023 to November 2024	Average Rainfall 1973 to 2023 (mm)	Percentage of 2023 – 2024 rainfall to long-term average (%)
December 2023	74.0	90.0	82
January 2024	75.0	78.6	95
February 2024	27.4	80.4	34
March 2024	38.6	55.0	70
April 2024	79.6	30.1	264
May 2024	25.4	39.8	64
June 2024	10.2	28.9	35
July 2024	31.8	25.8	123
August 2024	16.0	24.9	64
September 2024	28.0	29.0	97
October 2024	21.8	57.1	38
November 2024	109.6	74.5	147
Annual Total	**537.4**	**614.1**	**87.5**

Monthly rainfall data was taken from the Oakey Aero weather station (041359) from the period commencing 2019 to 2025. Graph 6.1displays monthly rainfall data showing season variation with higher rainfall periods from around November to March and lower periods from April to October. Higher than average rainfall periods were recorded from the periods of October 2021 to March 2022 and January to February 2020.



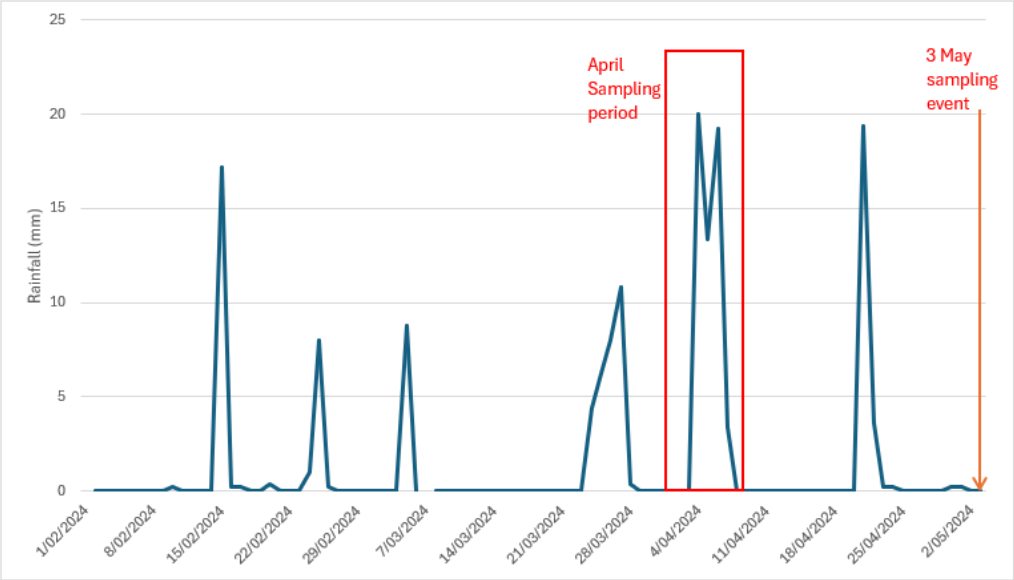
Graph 6.1 Monthly Rainfall at the Oakey Aero weather station (041359) from 2019 to 2025

Graph 6.2 presents the average monthly rainfall and maximum daily temperature at the Base during the monitoring period. The rainfall recorded in the months of March, April, July and November 2024 was higher than the monthly long-term average. While the average maximum daily temperature throughout the monitoring period closely aligned with the long-term trend, it was consistently slightly higher. Graph 6.2 presents the average monthly rainfall and maximum daily temperature at the Base during the monitoring period. The rainfall recorded in the months of March, April, July and November 2024 was higher than the monthly long-term average. While the average maximum daily temperature throughout the monitoring period closely aligned with the long-term trend, it was consistently slightly higher.

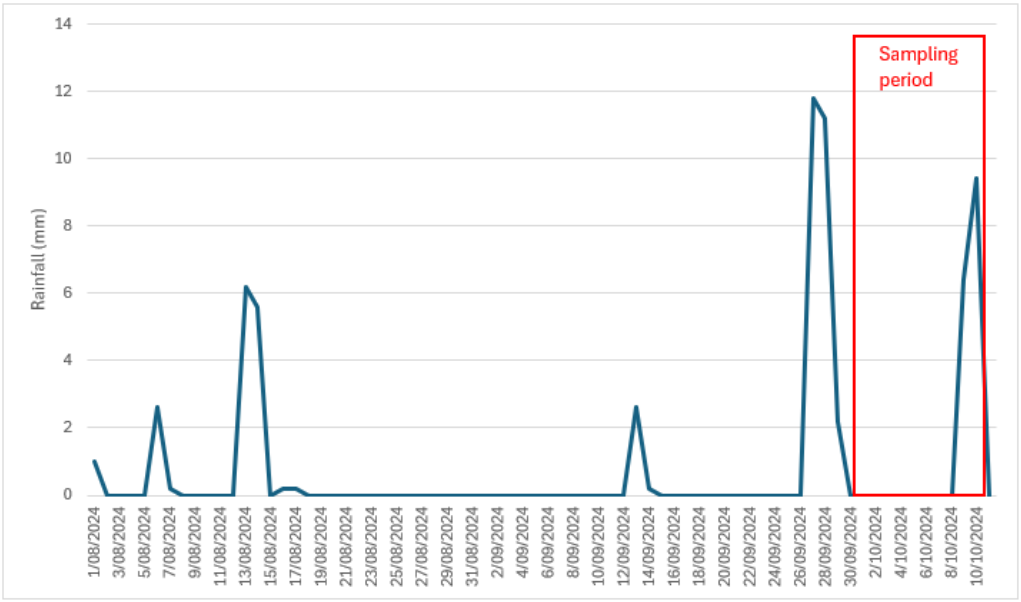


Graph 6.2 Monthly Rainfall and Mean Maximum Daily Temperature at the Base During the Monitoring Period

Daily rainfall for the leading up to the April and October sampling events is shown in Graph 6.3 and Graph 6.4, respectively.



Graph 6.3 Daily rainfall for the two-month period up to and including the April sampling event and 3 May event



Graph 6.4 Daily rainfall for the two-month period up to and including the October sampling event

The data shows a three-day rainfall event three days before the start of the April sampling event as well as a significant three-day rainfall event during the sampling period. One rainfall event was reported approximately 13 days before the 3 May sampling event.

The October event saw generally drier conditions for the two months leading up to the sampling period than for April, with a two-day rainfall event ending the day before the sampling period. Another rainfall event was reported near the end of the sampling period.

The sampling period is also compared to the residual rainfall mass curve for the Oakey BOM station, as shown in Graph 6.5. The RRM curve shows a cumulative deviation from the mean rainfall. In periods where mostly above average rainfall occurs, graphs show a positive or increasing variation from the mean. This occurs leading up to the April event, whereas the opposite trend is found during the October event.



Graph 6.5 Excerpt from RRM graph for Oakey

7. Monitoring data summary

Further breakdown of the graphs within this section of the report are included within Appendix A.

7.1 Groundwater

7.1.1 Field observations

Field observations from the April 2024 (AECOM) and October 2024 (GHD) monitoring event are summarised below.

– No notable estate management works, training activities or construction works were observed during the sampling event, which would impact the groundwater sampling program.
– Monitoring wells in April 2024 were accessible and observed to be in good condition with the exception of:

April 2024

- MW296 and MW297 were not accessed as the stakeholder did not grant access permission.
- MW242 had been destroyed and MW243 was sampled in replacement.
- MW270 was blocked with roots.
- MW289 was dry.
- MW279 has likely been destroyed during road repairs.
- Well maintenance including new bolts or new well covers are required for MW294, MW204, MW230, MW265, MW272, MW282, MW300.

October 2024

- MW056 was not accessed as GHD did not have contact details for the new owners to gain access permission.
- MW222 and MW223 had been covered in asphalt during resurfacing works.
- MW255 could not be opened at the keyholes had been stripped.
- MW232, MW243 and MW567 were dry.

– No visible signs of contamination in groundwater were observed at the locations sampled (i.e., no sheen, staining or foaming present) with the exception of:

April 2024

- MW193 – hydrocarbon odour and light non aqueous phase liquid (LNAPL).
- MW189, MW222 and MW265 – organic odour.
- MW174, MW257, MW271, MW275, MW278, MW280 and MW283 – sulfuric odour.

October 2024

- MW193 – hydrocarbon odour and sheen.
- MW575 – sulfuric odour.

7.1.2 Groundwater elevations

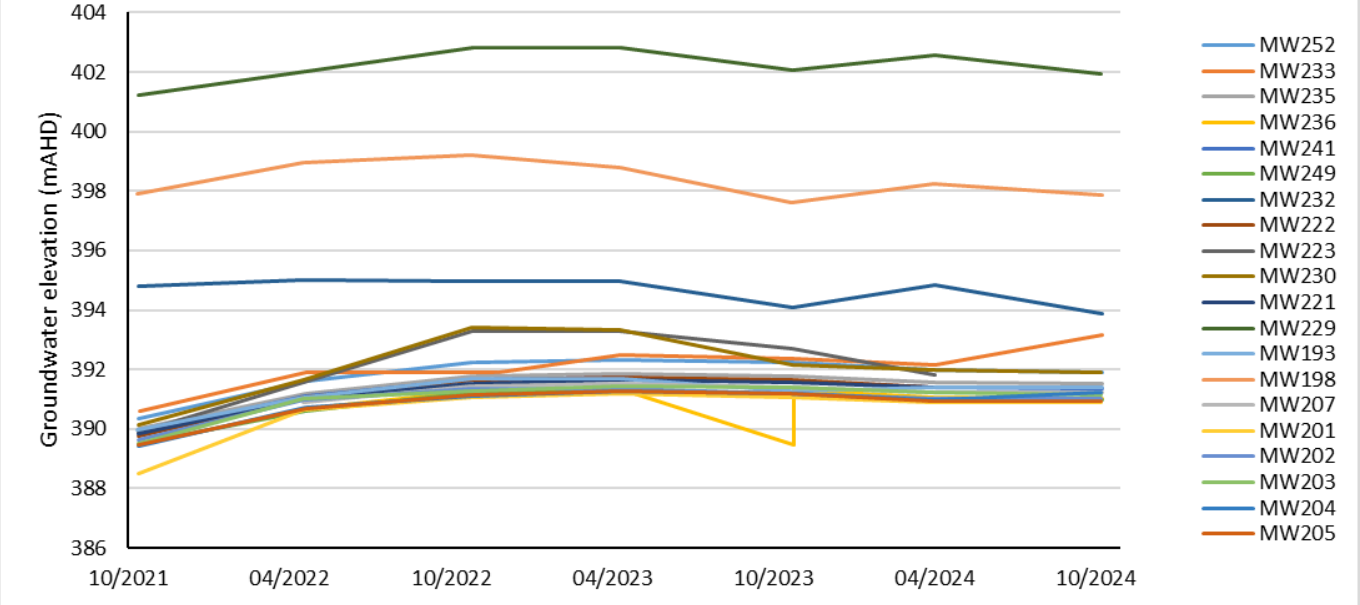
Groundwater elevations recorded during monitoring well gauging for the sampling events are summarised in Table 7.1 below with full results presented in Table 1, Appendix B. The range in groundwater elevations in the Oakey Creek Alluvium aquifer in the two sampling events were comparable. In contrast, groundwater elevations and depth to water varied in the Walloon Coal Measures Aquifer. Differences in the depth to groundwater in the Walloon Coal Measures between April and October were due to a smaller number of wells being sampled in October, which didn't include the wells with the shallower depth the water.

While the aquifers have been defined, specific well details such as screen intervals and screened lithology are not always known, particularly for off-Base locations, which limits the extent to which the data can be interpreted.

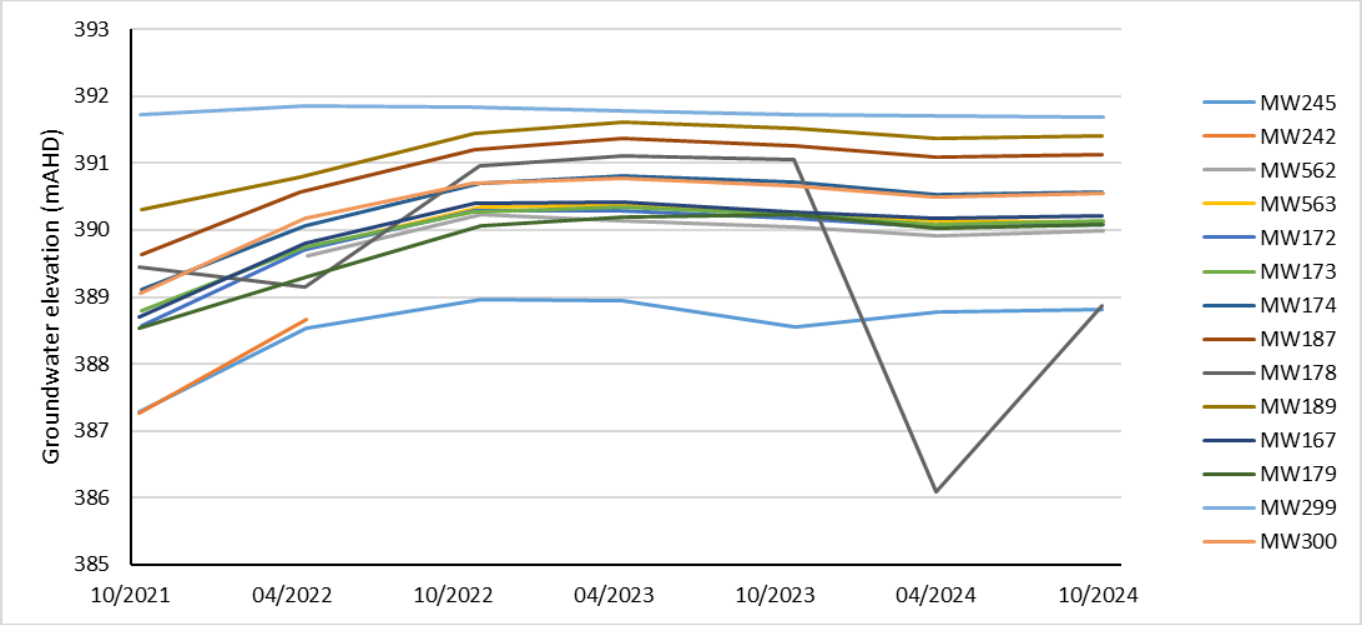
Table 7.1 Depth to Groundwater and Groundwater elevations

Aquifer	Event	Range in hydraulic head (mAHD)	Range in depth to water (mBTOC)	No. of wells gauged
Oakey Creek Alluvium	April 2024	386.09 (MW178) to 402.58 (MW229)	2.95 (MW229) to 17.4 (MW178)	54
	October 2024	386.80 (MW272) to 401.93 (MW229)	3.6 (MW229) to 14.85 (MW575)	56
Deeper aquifers	April 2024	364.90 (MW293) to 394.66 (MW295)	8.18 (MW295) to 37.13 (MW293)	7
	October 2024	362.90 (MW567) to 385.08 (MW568)	17.76 (MW568) to 39.22 (MW567)	3

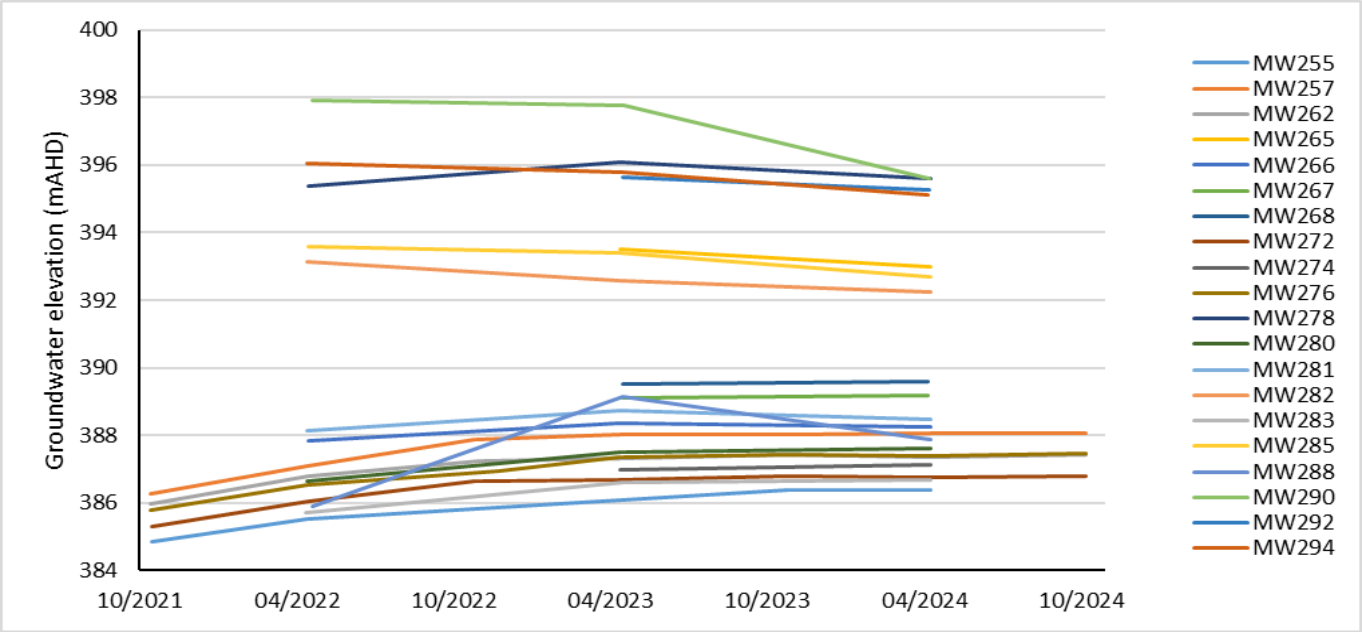
Standing water level hydrographs showing changes in groundwater elevation over time are presented in Graph 7.1, Graph 7.2, Graph 7.3 and Graph 7.4. Overall, groundwater elevations have not changed significantly since OMP monitoring began in 2019.



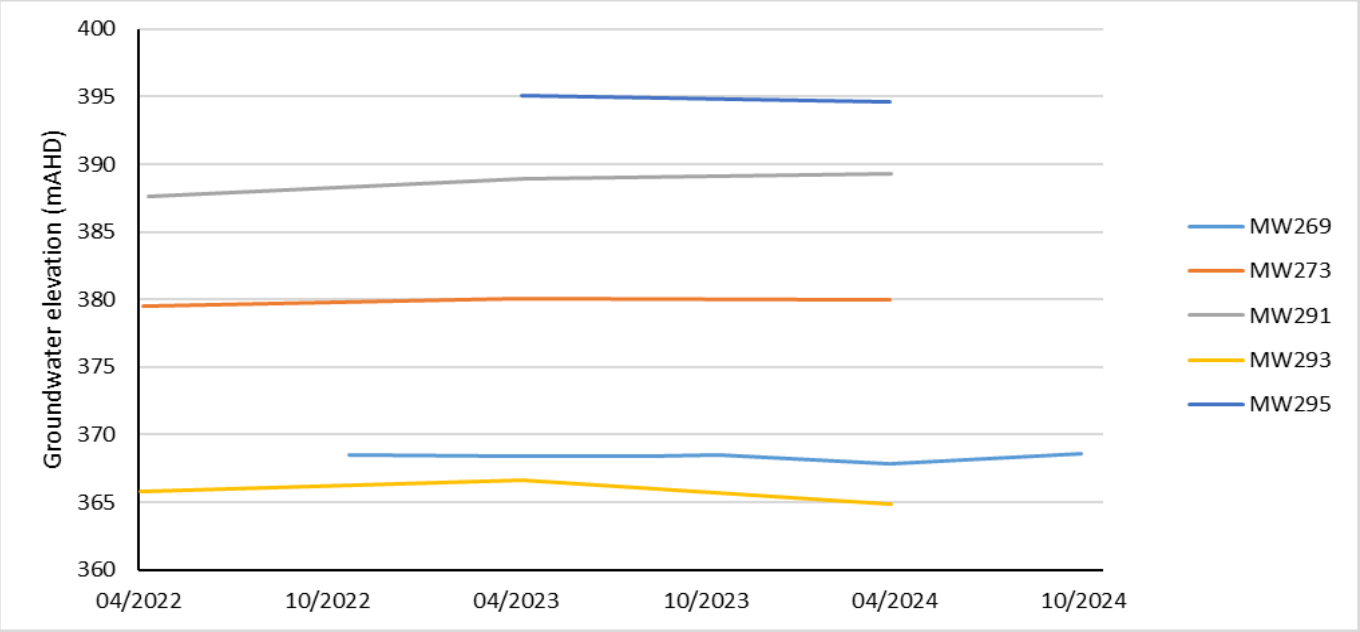
Graph 7.1 Groundwater elevation hydrograph for up-gradient on-Base wells in the Oakey Creek Alluvium



Graph 7.2 *Groundwater elevation hydrograph for down-gradient on-Base wells in the Oakey Creek Alluvium*



Graph 7.3 *Groundwater elevation hydrograph for off-Base wells in the Oakey Creek Alluvium*



Graph 7.4 ***Groundwater elevation hydrograph for the wells in the deeper aquifers***

7.1.3 Groundwater flow directions

Interpreted groundwater contour maps for the Base (Oakey Creek Alluvium aquifer) for the monitoring periods were presented in the Sampling Event Factual Reports (AECOM, 2024d; GHD, 2024b) and are presented as Figure 7 and Figure 8 in Appendix A. The interpreted groundwater contours for the Oakey Creek Alluvium aquifer for the two monitoring periods were similar with the general groundwater flow direction from east to west across the Base. Groundwater in the Oakey Creek Alluvium aquifer off-Base areas to the south, flow direction in a north westerly direction. The groundwater flow directions are consistent with previous years (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c).

Based on the limited groundwater elevation data for the Walloon Coal Measures, the groundwater flow direction is inferred to be towards the west.

7.1.4 Groundwater quality parameters field measurements

A summary of the water quality parameters in the different aquifer units measured during sample collection at the Base in March-May 2023 and October 2023 are presented in Table 7.2 and Table 7.3. The full results are presented in Table 1, Appendix B and in the Sampling Event Factual Reports in Appendix D. The mean was included as the appropriate average based on statistical analysis using ProUCL.

Table 7.2 Groundwater quality parameter field measurements in groundwater from the Oakey Creek alluvium

Parameter	Event	No. of samples	Minimum	Maximum	Mean	Normal 95% UCL	Gamma 95% UCL	Lognormal 95% UCL
DO (mg/L)	April 2024	70	0.0 (MW272, MW267)	5.69 (MW245)	1.35	1.621	N/A	N/A
	October 2024	55	0.7 (MW257, MW236, MW572D)	7.6 (MW167)	2.70	3.047	3.082	3.209
	Historical results		0.23 (MW257)	6.59 (MW167)	2.79	2.176	2.195	2.361
EC (µS/cm)	April 2024	70	218 (MW232)	9,075 (MW267)	2,548	2,857	2,875	3,034
	October 2024	55	369 (MW233)	6,377 (MW204)	2,336	2,630	2,639	2,706
	Historical results		201 (MW232)	10,532 (MW242)	2,666	2,729	2,729	2,829
pH	April 2024	69	6.36 (MW236)	9.29 (MW267)	7.03	7.108	7.105	N/A
	October 2024	55	6.78 (MW299)	8.20 (MW038)	7.21	7.266	7.266	N/A
	Historical results		6.44 (MW252)	11.84 (MW288)	7.30	7.257	7.252	N/A
ORP (mV)	April 2024	70	-356 (MW280)	212.5 (MW276)	2.97	27.41	N/A	N/A
	October 2024	55	-355.7 (MW574D)	71.9 (MW573D)	-107.0	-89.17	N/A	N/A
	Historical results		-226.7 (MW288)	214.7 (MW207)	80.05	92.59	N/A	N/A
Temperature (°C)	April 2024	70	18.5 (MW288)	30.8 (MW274)	22.8	23.21	23.21	N/A
	October 2024	55	19.6 (MW173)	24.4 (MW003)	22.1	22.3	22.31	N/A
	Historical results		15.7 (MW167)	38.8 (MW147)	23.2	23.21	23.2	23.2

Notes: DO = dissolved oxygen, EC = electrical conductivity, ORP = oxidation reduction potential.

Table 7.3 Groundwater quality parameter field measurements in groundwater from the Walloon Coal Measures

Parameter	Event	No. of samples	Minimum	Maximum	Mean
DO (mg/L)	April 2024	5	0.2 (MW295)	0.5 (MW273)	0.34
	October 2024	1	2.4 (MW269)	2.4 (MW269)	N/A
	Historical results		0.26 (MW274)	2.84 (MW269)	1.19
EC (µS/cm)	April 2024	5	909 (MW295)	3,179 (MW293)	1619.2
	October 2024	1	1,174 (MW269)	1,174 (MW269)	N/A
	Historical results		228 (MW273)	4,247 (MW273)	1,954
pH	April 2024	5	7.7 (MW291)	11.71 (MW293)	9.79
	October 2024	1	11.36 (MW269)	11.36 (MW269)	N/A
	Historical results		7.54 (MW291)	12.13 (MW269)	9.98
ORP (mV)	April 2024	5	-168.8 (MW291)	-44.4 (MW295)	-100.0
	October 2024	1	-164 (MW269)	-164 (MW269)	N/A
	Historical results		-65.4 (MW269)	189.8 (MW273)	43.7
Temperature (°C)	April 2024	5	19.9 (MW291)	23.4 (MW295)	22.3
	October 2024	1	23 (MW269)	23 (MW269)	N/A
	Historical results		16.1 (MW269)	22.5 (MW274)	20.7

Notes: DO = dissolved oxygen, EC = electrical conductivity, ORP = oxidation reduction potential, N/A = not applicable.

Based on the mean groundwater quality parameter results over the sampling period, the aquifer units at the Base can be characterised as follows:

– Oakey Creek Alluvium is near neutral (>pH 6, <pH 8), poorly (<~1 mg/L) to moderately oxygenated (>1, <4 mg/L DO), moderately reducing (0 to -200 mV) and brackish (>1500 µS/cm EC).
– Walloon Coal Measures is alkaline (>pH 8), poorly oxygenated (<~1 mg/L DO), moderately reducing (0 to -200 mV) and brackish (>1500 µS/cm EC).

The aquifer parameters recorded in these sampling events are mostly consistent with previous results (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c), although redox in the Oakey Creek Alluvium and Walloon Coal Measures showed lower results, particularly in October 2024.

7.1.5 Groundwater analytical results

A summary of analytical results from the OMP works during the monitoring period is provided in Table 7.4 below. Further information is presented in the OMP sampling event factual reports provided in Appendix D.

Historical groundwater laboratory PFAS analytical results collected at the Base are presented in Table 2 in Appendix B for the Base.

Table 7.4 Summary of PFAS in Groundwater During the Monitoring Period

Sampling event	No. of sample locations	Compound	Concentration range (µg/L)	No. of sample locations with concentration > LOR
April 2024	77	PFOS	<0.01* – 302 (MW204)	58
		PFOA	<0.01* – 31.9 (MW204)	41
		PFHxS +PFOS	<0.01* – 898 (MW204)	58

Sampling event	No. of sample locations	Compound	Concentration range (µg/L)	No. of sample locations with concentration > LOR
October 2024	56	PFOS	<0.01* - 338 (MW204)	51
		PFOA	<0.01* - 46** (MW204)	37
		PFHxS +PFOS	<0.01* – 1,090** (MW204)	51
* Refer to Table 2, Appendix B for Well IDs. ** The concentration of the quality control sample collected at this location has been adopted given it reported a higher concentration than the primary sample collected.				

Table 7.5 presents details of the first-time detections of PFHxS + PFOS and PFOA, new exceedances of guidelines during the two sampling events, and new maximum and new minimum concentrations. The new maximum and new minimum concentrations are based on numerical changes. In other words, any increase of decrease is a numerical change. Whether the change is significant in terms of altering the risk profile of the system, requires further consideration.

Minor changes in concentration (i.e. within the same order of magnitude) can fall within an acceptable range of laboratory error and therefore are not considered significant. This is quantified by using the relative percentage difference (RPD) approach. The RPD provides a percentage of difference between the two values based on the formula:

$$RPD = \frac{|C_1 - C_2|}{\left(\frac{C_1 + C_2}{2}\right)} X\ 100$$

Where, in this case, C1 = concentration of the previous high or low value and C2 = concentration of most recent sample. The RPD is used to compare a primary sample to a duplicate sample to assess laboratory precision. Typically, a RPD in the order of 30% is considered acceptable i.e. the concentration of C2 falls within 30% of C1. Most of the samples reported as new maxima or minima in Table 7.5, fall within 30% of the previous high or low, meaning the new value could be explained by laboratory error and is therefore not a significant change. Given this there are only three of results that might be considered changes worth further discussion (**bold** in the table below):

– PFHxS + PFOS in MW132 increased by two orders of magnitude from 0.2 to 11.4 µg/L (RPD = 193%).
– PFHxS + PFOS in MW252 increased from 39.5 to 60.6 µg/L (RPD = 42%).
– PFOA in MW562 increased by one order of magnitude from 0.74 to 1.07 µg/L (RPD = 36.5%). While this is a minor increase, it is an off-Base well which may create an undue perception of an increasing risk to the public.

NOTE – Order of Magnitude refers to something decreasing or increasing by multiples of ten. For instance, an increase from 10 to 100 is an 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 represent a significant change 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.

Table 7.5 Summary of first-time detections, new guideline exceedances, and new minimum and maximum values for PFHxS + PFOS and PFOA

Sampling Event	Compound	Groundwater					
		First-time detections	New exceedances of drinking water guidelines	New maximum concentrations		New minimum concentrations	
				New in 2024	Historical	New in 2024	Historical
April 2024	PFHxS + PFOS	None	None	On-Base MW562 (23.2 µg/L)	On-Base MW562 (14.8 µg/L)	On-Base MW167 (6.71 µg/L) MW187 (0.51 µg/L) MW205 (11.6 µg/L) MW233 (0.67 µg/L) MW235 (11.0 µg/L) MW245 (0.22 µg/L)	On-Base MW167 (6.82 µg/L) MW187 (0.68 µg/L) MW205 (13.4 µg/L) MW233 (0.74 µg/L) MW235 (11.2 µg/L) MW245 (0.31 µg/L)
				Off-Base **MW132 (11.4 µg/L)**	Off-Base MW132 (0.20 µg/L)	Off-Base MW056 (0.23 µg/L) MW113 (0.27 µg/L) MW122 (1.78 µg/L) MW157 (5.50 µg/L) MW276 (15.1 µg/L) MW280 (0.16 µg/L) MW281 (2.47 µg/L) MW291 (0.15 µg/L)	Off-Base MW056 (0.27 µg/L) MW113 (0.3 µg/L) MW122 (1.96 µg/L) MW157 (8.93 µg/L) MW276 (16.6 µg/L) MW280 (0.20 µg/L) MW281 (3.36 µg/L) MW291 (0.20 µg/L)
	PFOA	MW132 (0.42 µg/L)	None	On-Base MW173 (0.45 µg/L)	On-Base MW173 (0.49 µg/L)	On-Base MW173 (0.45 µg/L) MW205 (0.13 µg/L) MW222 (1.30 µg/L) MW241 (0.066 µg/L) MW562 (0.02 µg/L)	On-Base MW173 (0.46 µg/L) MW205 (0.54 µg/L) MW222 (1.36 µg/L) MW241 (0.08 µg/L) MW562 (0.03 µg/L)
				Off-Base MW132 (0.42 µg/L) MW294 (0.17 µg/L)	Off-Base MW132 (<0.01 µg/L) MW294 (0.16 µg/L)	Off-Base MW157 (0.15 µg/L) MW276 (0.38 µg/L) MW281 (0.12 µg/L)	Off-Base MW157 (0.24 µg/L) MW276 (0.42 µg/L) MW281 (0.17 µg/L)

Sampling Event	Compound	Groundwater					
		First-time detections	New exceedances of drinking water guidelines	New maximum concentrations		New minimum concentrations	
				New in 2024	Historical	New in 2024	Historical
October 2024	PFHxS + PFOS	None	None	On-Base MW173 (8.04 µg/L) MW229 (60.8 µg/L) **MW252 (60.6 µg/L)**	On-Base MW173 (7.03 µg/L) MW229 (56.6 µg/L) MW252 (39.5 µg/L)	On-Base None	On-Base None
				Off-Base MW151 (0.05 µg/L) MW262 (0.74 µg/L) MW268 (0.74 µg/L)	Off-Base MW151 (0.03 µg/L) MW262 (0.71 µg/L) MW (0.73 µg/L)	Off-Base None	Off-Base None
	PFOA	None	None	On-Base **MW562 (1.07 µg/L)**	On-Base MW562 (0.74 µg/L)	On-Base None	On-Base None

There was one first-time detection of PFOA (0.42 µg/L) in groundwater during the April 2024 monitoring round in off-Base residential bore MW132. Results were below the drinking water guidelines for PFOA. PFHxS + PFOS concentrations at this location (11.3 µg/L) were a new maximum and were above the drinking water criteria, however previous results have also exceeded the drinking water criteria in MW132. There were no new exceedances of drinking water guidelines in April 2024.

There were no first-time detections and no new exceedances of drinking water guidelines in October 2024.

Table 7.6 summarises the number of samples collected in each monitoring event and how many samples were above the relevant guidelines.

Table 7.6 Number of samples above the relevant guidelines

Sampling round	No. of sample locations	No. of sample locations above drinking water guidelines		No. of sample locations above ecological guidelines	
		PFOA	PFHxS + PFOS	PFOA	PFOS*
April 2024	77	On-Base: 11 Off-Base: 0	On-Base: 31 Off-Base: 21	On-Base: 1 Off-Base: 0	On-Base: 32 Off-Base: 26
October 2024	56	On-Base: 12 Off-Base: 0	On-Base: 41 Off-Base: 6	On-Base: 1 Off-Base: 0	On-Base: 42 Off-Base: 9

*The number of samples presented above ecological guidelines only includes those above the LOR but may also include results below the LOR.

The concentrations reported are generally consistent with the historical results for the previous monitoring wells, and the detections are not considered a deviation from the historical dataset.

Groundwater sample results are presented in the following figures in Appendix A:

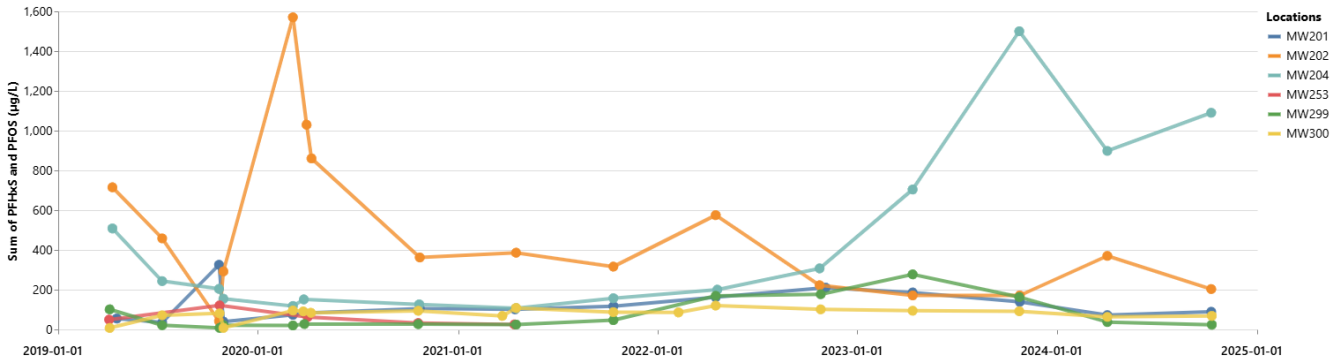
– Figure 9 – On-Base – PFAS in Groundwater, Surface Water and Sediment (April 2024).
– Figure 10 – Off-Base – PFAS in Groundwater, Surface Water and Sediment (April 2024).
– Figure 11 – On-Base – PFAS in Groundwater (October 2024).
– Figure 12 – Off-Base – PFAS in Groundwater (October 2024).

Mann-Kendall statistics were applied for the groundwater well dataset, for consistency with previous OMRs (see Table 6, Appendix B). However, Mann-Kendall analysis is less reliable where data fluctuates seasonally, such as the case for the Base, noting the seasonal differences between April (following wet season) and October (following dry season). Given this, a visual assessment of the data is also required to assess the Mann-Kendall interpretation.

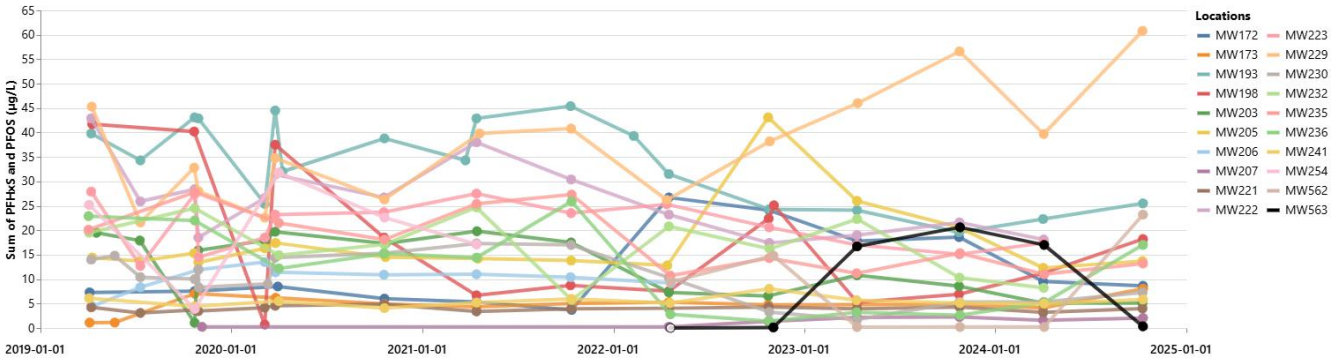
Historical groundwater concentrations of PFHxS + PFOS have been displayed graphically on temporal trend graphs as follows:

– Graph 7.5 – On-Base source area wells with high concentrations – Oakey Creek Alluvium.
– Graph 7.6 – On-Base source area wells with lower concentrations – Oakey Creek Alluvium.
– Graph 7.7 – On-Base upgradient boundary wells – Oakey Creek Alluvium.
– Graph 7.8 - On-Base downgradient boundary wells – Oakey Creek Alluvium.
– Graph 7.9 – Off-Base wells – Oakey Creek Alluvium.
– Graph 7.10 – Off-Base wells – Underlying Aquifers.

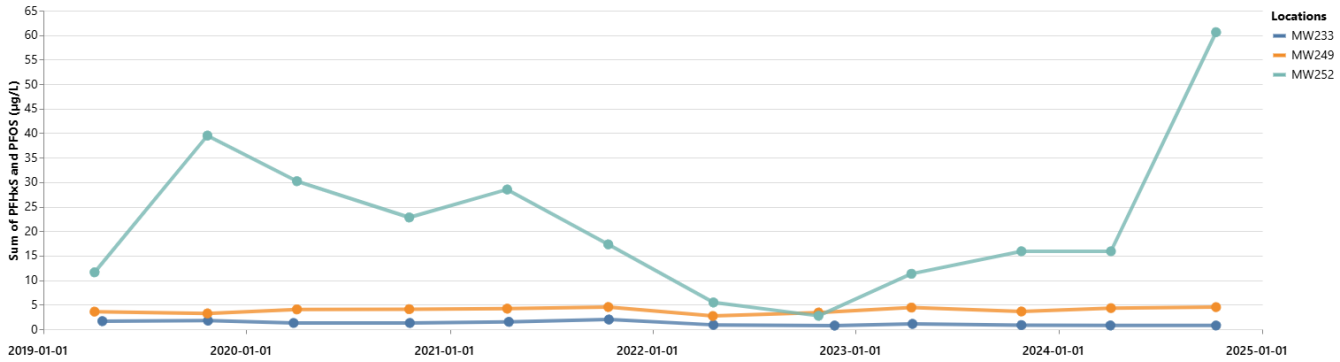
With a few exceptions, the data indicate relatively stable trends over the monitoring period.



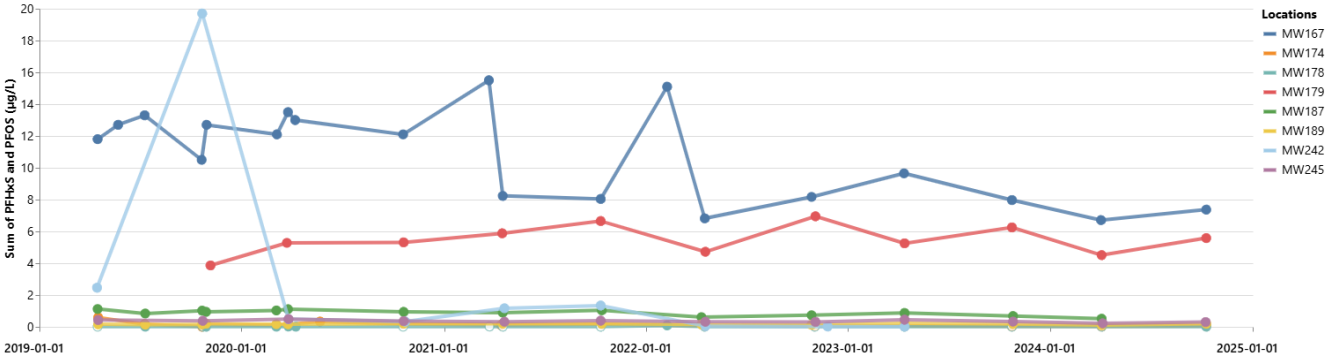
Graph 7.5 ***Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with high concentrations from 2019-2024 – Oakey Creek Alluvium***



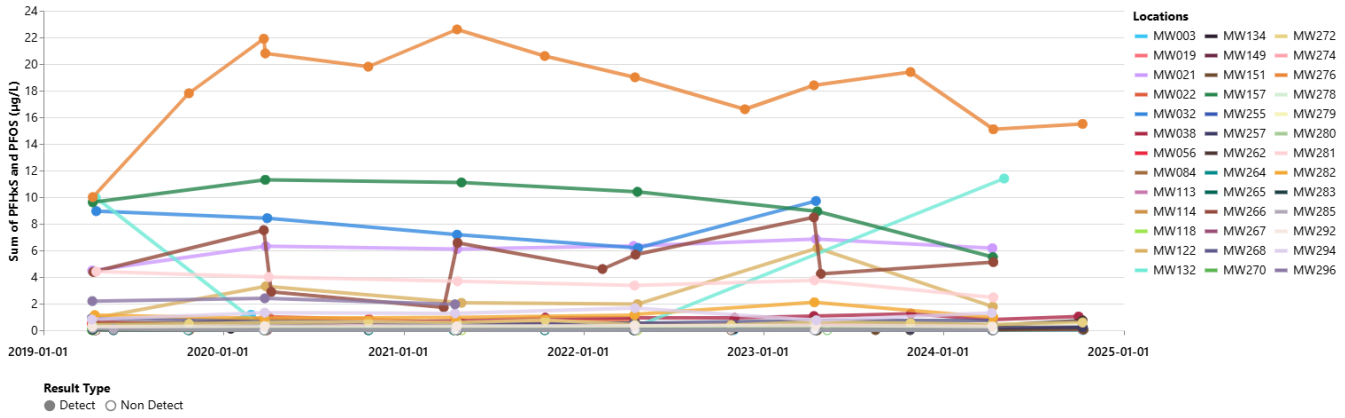
Graph 7.6 ***Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with lower concentrations from 2019-2024 – Oakey Creek Alluvium***



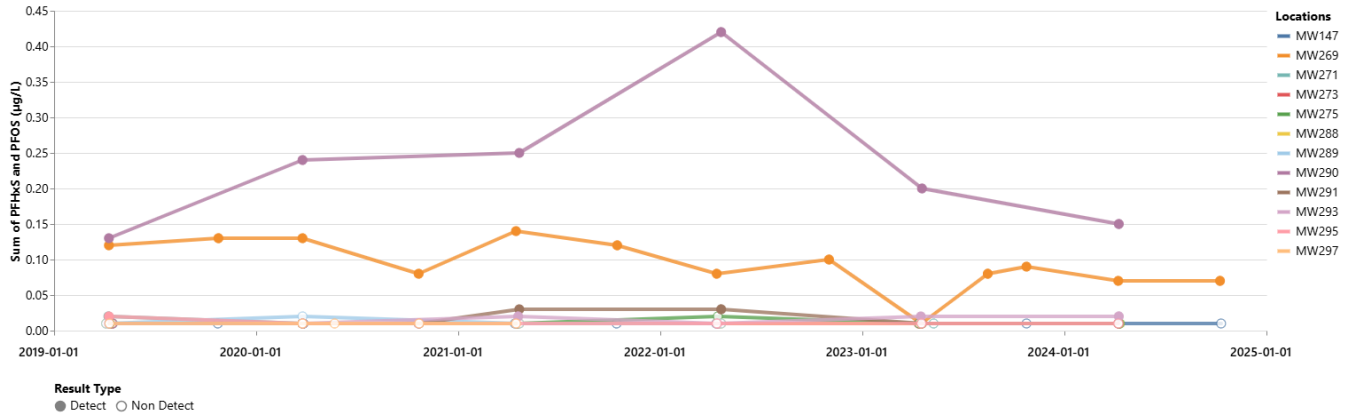
Graph 7.7 ***Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base upgradient boundary wells from 2019-2024 – Oakey Creek Alluvium***



Graph 7.8 ***Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base downgradient boundary wells from 2019-2024 – Oakey Creek Alluvium***



Graph 7.9 *Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base wells from 2019-2024 – Oakey Creek Alluvium*



Graph 7.10 *Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base Underlying Aquifers from 2019-2024*

7.2 Surface water

7.2.1 Surface water quality parameter field measurements

Surface water quality parameter field measurements were measured prior to collecting surface water samples. The readings from the April 2024 sampling event are presented in Table 3, Appendix B and in the sampling event factual report in Appendix D. A summary of the water quality parameters in the different creeks are presented in Table 7.7.

Table 7.7 *Summary of surface water (creeks and drainage channels) quality parameter field measurement results*

Parameter	Event	Oakey Creek (n = 7)		Westbrook Creek (n= 1)	Doctor Creek (n=1)	Drainage Channel Samples (n= 10)	
		Range	Mean	Result	Result	Range	Mean
pH	April 2024	6.95 (SW011) – 8.02 (SW004)	7.51	7.86	7.33	6.71 (SW066) – 7.4 (SW057)	7.02
	Historical result	6.8 (SW011) – 8.58 (SW056)	7.8	8.50	8.57	6.74 (SW066) – 8.92 (SW009)	7.77

Parameter	Event	Oakey Creek (n = 7)		Westbrook Creek (n= 1)	Doctor Creek (n=1)	Drainage Channel Samples (n= 10)	
		Range	Mean	Result	Result	Range	Mean
Temperature ºC	April 2024	17.3 (SW013) – 25.7 (SW056)	20.7	18.7	15.1	16.8 (SW009) - 31.5 (SW027)	24.3
	Historical result	19.7 (SW056) – 28.0 (SW012)	23.2	23.8	24.5	18.1 (SW009) – 34.9 (SW019)	25.5
Dissolved Oxygen (mg/L)	April 2024	0.86 (SW011) - 5.56 (SW032)	3.57	5.48	4.07	1.14 (SW066) – 4.84 (SW057)	3.19
	Historical result	1.62 (SW011) – 8.55 (SW059)	4.46	6.40	9.04	0.20 (SW027) – 14.78 (SW025)	4.01
ORP (mV)	April 2024	-86.4 (SW010) – SW059 (245.7)	69.6	40.6	-128.9	-112.5 (SW025) – 293.7 (SW024)	48.5
	Historical result	208 (SW040) – 339.9 (SW011)	289	-40.4	14.7	106 (SW065) – 347.9 (SW009)	233
Electrical conductivity (µS/cm)	April 2024	187.7 (SW040) – 1022 (SW056)	593.4	836	176	110.9 (SW027) – 1184 (SW009)	317.3
	Historical result	169 (SW013) – 1302 (SW059)	572	946	417	82.7 (SW021) – 1790 (SW019)	253

The Oakey Creek water is slightly alkaline (pH ~7.51), low to moderately oxygenated (3.57 mg/L DO), and moderately oxidising (~69.6 mV), with fresh conditions (~593.4 µS/cm). Westbrook Creek stands out as the most oxygenated (5.48 mg/L DO) and most alkaline (pH ~7.86), with slightly higher salinity (~836 µS/cm).

In contrast, Doctor Creek shows reducing conditions (redox ~-128.9 mV), the lowest conductivity (~176 µS/cm), and cooler temperatures (~15.1 °C), suggesting fresh, stagnant water. The Drainage Channels are neutral to slightly alkaline (pH ~7.02), moderately oxygenated (3.19 mg/L DO), and weakly oxidising (~48.5 mV), with fresh to slightly brackish water (~317.3 µS/cm) and warmer temperatures (~24.3 °C).

These results are broadly consistent with previous results (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c).

7.2.2 Surface water analytical results

Surface water analytical results for April 2024 are included in Table 4 in Appendix B and monitoring activities are summarised in the April 2024 sampling event factual report in Appendix D. A summary of surface water analytical results is provided in Table 7.8 below. Table 7.9 provides a summary of new maximum and minimum concentrations in surface water during the monitoring period.

Table 7.8 Surface water analytical results

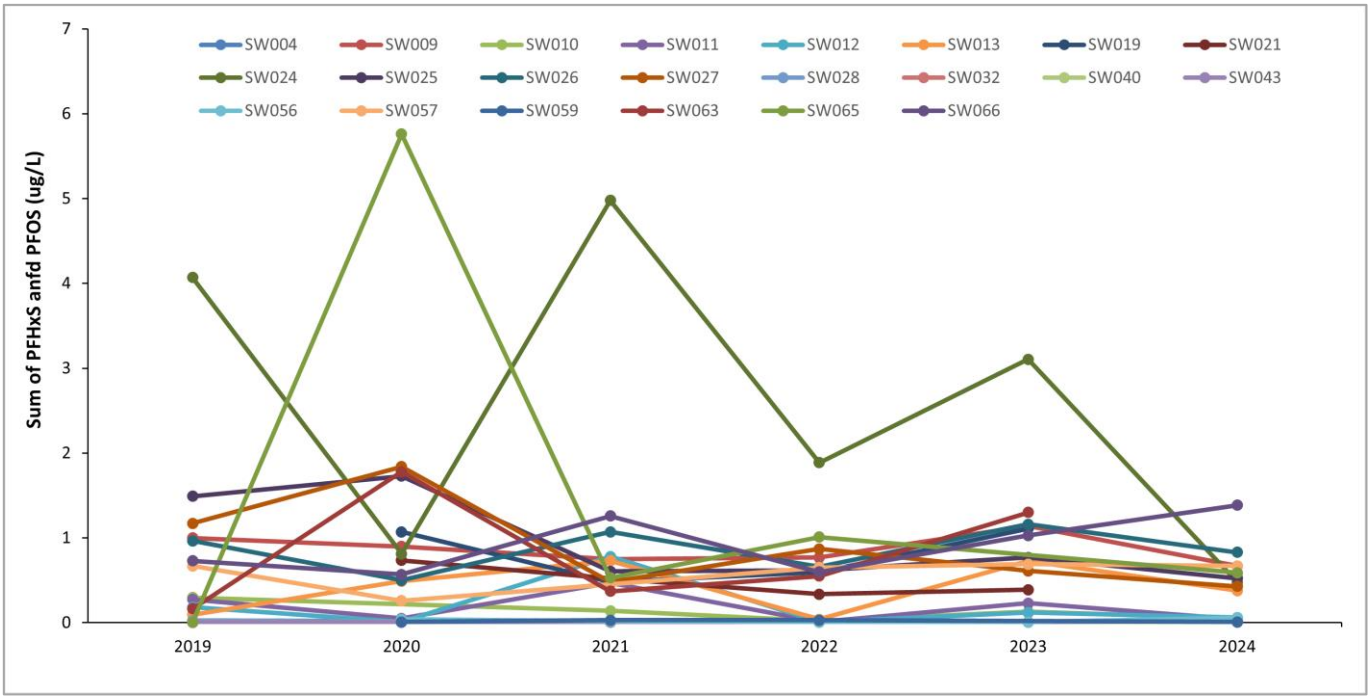
Sampling Event	No. of sample locations	Compound	Concentration Range (µg/L)	Historical range (µg/L)	No. of sample locations with concentration > LOR
April 2024	19	PFOS	<0.01* – 1.07 (SW066)	<0.01* – 2.87 (SW024)	13
		PFOA	<0.01* – 0.1 (SW057, SW066)	<0.01* – 0.19 (SW065)	5
		PFHxS + PFOS	<0.01* – 1.84 (SW066)	<0.01* – 5.76 (SW065)	13
* Refer to Table 4, Appendix B for Well IDs.					

Table 7.9 Summary of new maximum and minimum concentrations in surface water during April 2024 event

Sampling event	Compound	First-time detection / new exceedance of guidelines	New maximum concentrations	New minimum concentrations	Historical Range
April 2024	PFOA	None	SW057 (0.1 µg/L) SW066 (0.10 µg/L)	SW065 (<0.01 µg/L)	SW057 (0.04 – 0.04 µg/L) SW065 (0.01 – 0.19 µg/L) SW066 (0.02 – 0.08 µg/L)
	PFHxS + PFOS	None	SW056 (0.06 µg/L) SW066 (1.84 µg/L)	SW009 (0.67 µg/L) SW027 (0.43 µg/L) SW059 (<0.01 µg/L)	SW009 (0.75 – 1.14 µg/L) SW027 (0.48 – 1.84 µg/L) SW056 (<0.01 – 0.04 µg/L) SW059 (0.01 – 0.03 µg/L) SW066 (0.57 – 1.53 µg/L)

There were no new exceedances of the guideline values or first-time detections of PFHxS + PFOS or PFOA in surface water samples during the monitoring period. New maximum concentrations for PFOA were reported at SW057 and SW066 and for PFHxS + PFOS were reported at SW056 and SW066, however these are only minor changes and do not indicate a change in the risk profile for the base. A new minimum concentration for PFOA was reported at SW065 and for PFHxS + PFOS was reported at SW009, SW027 and SW059. Surface water sample results from April 2024 are presented in Figure 9 and Figure 10 in Appendix A. Historical surface water concentrations of PFHxS + PFOS have been displayed graphically on a temporal trend graph (Graph 7.11).

The graphs show that, with the exceptions of SW065 and SW024, concentrations have remained stable.



Graph 7.11 Sum of PFHxS and PFOS in surface water sampled during OMP monitoring rounds from 2019-2024

7.3 Sediment

Sediment samples were co-located and collected with surface water samples during the April 2024 sampling event. PFAS analytical results for sediment are presented in Table 5 in Appendix B. Sediment results from April 2024 are presented in Figure 9 and Figure 10 in Appendix A. Monitoring activities are summarised in the April 2024 sampling event factual report (AECOM, 2024d) in Appendix D. A summary of sediment analytical results is provided in Table 7.10 below with a summary of first-time detections presented in Table 7.11.

Guidelines are not developed for PFAS in sediment in Australia. Often soil criteria are used as a screening criterion for sediments. However, sediments by definition, refer to material under water and therefore, the exposure scenario for sediments is different to soil. Consequently, soil criteria are not considered appropriate. The collection of sediment data is useful in understanding PFAS mass distribution and risk to aquatic biota.

Table 7.10 Summary of PFAS in Sediment during the Monitoring Period

Sampling Event	No. of sample locations	Compound	Concentration Range (mg/kg)	Historical range (mg/kg)	No. of sample locations with concentration > LOR
April 2024	22	PFOS	<0.0002* – 1.24** (SD025)	<0.0002* – 0.37 (SD024)	20
		PFOA	<0.0002* – 0.0148** (SD025)	<0.0002* – 0.0168 (SD025)	6
		PFHxS + PFOS	<0.0002* – 1.24** (SD025)	<0.0002* – 0.29 (SD024)	20
* Refer to Table 5, Appendix B for Well IDs. ** The concentration of the quality control sample collected at this location has been adopted given it reported a higher concentration than the primary sample collected.					

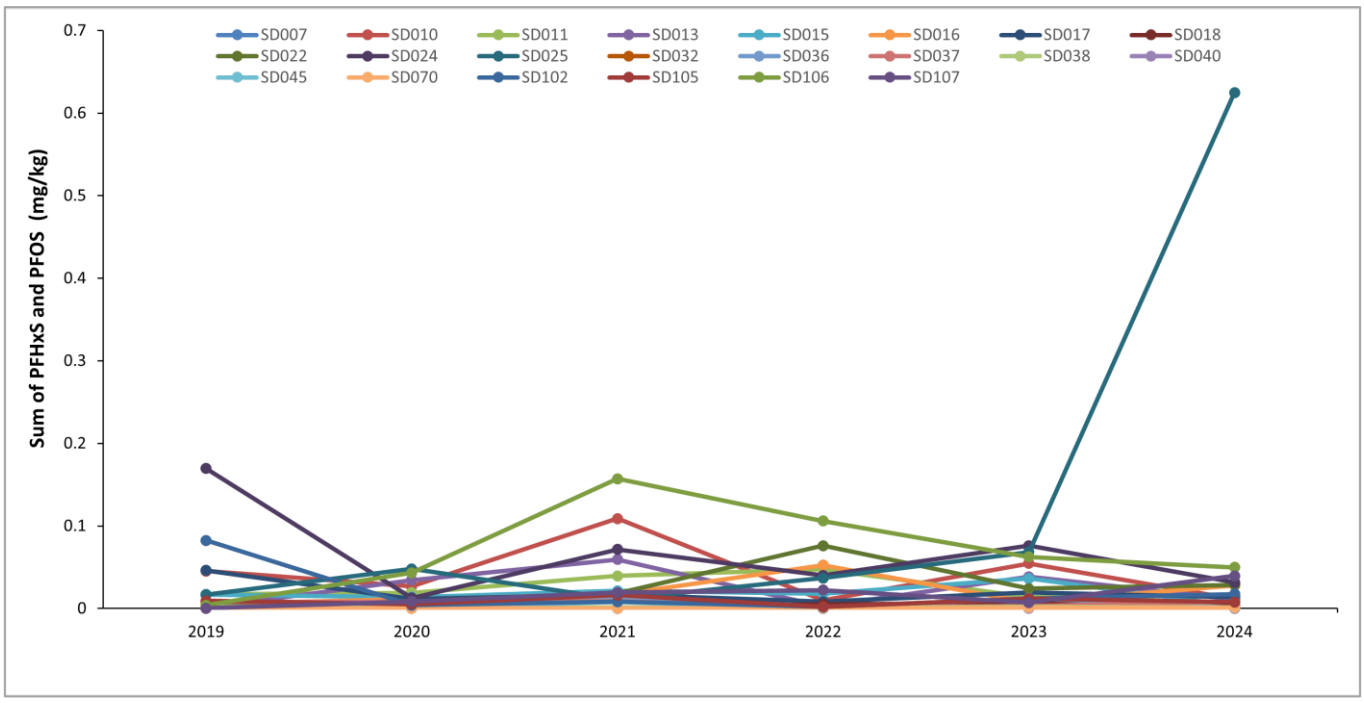
Table 7.11 Summary of First-time Detections and new Maximum and Minimum Values for PFHxS + PFOS, PFOA and PFOS in Sediment

Sampling Event	Compound	Sediment first-time detection	New maximum concentrations	New minimum concentrations	Historical Range
April 2024	PFOA	None	SD017 (0.0004 mg/kg)	SD108 (0.0005 mg/kg)	SD017 (<0.0002 – 0.0002 mg/kg) SD108 (0.0010 mg/kg)*
	PFHxS + PFOS	SD032 (0.0003mg/kg)	SD025 (1.24 mg/kg)** SD083 (0.0285 mg/kg) SD107 (0.0456 mg/kg) SD108 (0.0377 mg/kg)	SD015 (0.0030 mg/kg) SD025 (0.0098 mg/kg) SD130 (0.0089 mg/kg)	SD015 (0.0116 – 0.0364 mg/kg) SD025 (0.0111 – 0.0683 mg/kg) SD032 (<0.0002 mg/kg) SD083 (0.0083 – 0.0169 mg/kg) SD107 (0.0004 – 0.0223 mg/kg) SD108 (0.008 – 0.0116 mg/kg) SD130 (0.0162 – 0.0614 mg/kg)

* Only one previous sample for this location

** This was the duplicate of SD025, which reported a new minimum concentration. Given the large difference between results and the magnitude of the new maximum, this result may be erroneous.

A first time detection was recorded for PFHxS + PFOS in SD032. New maximum concentrations for PFOA were reported at SD107 and for PFHxS + PFOS were reported at SD025 (see note in Table 7.11), SD083, SD107 and SD108. A new minimum concentration for PFOA was reported at SD108 and for PFHxS + PFOS was reported at SD015, SD025 and SD130. The new minimum and maximum concentrations are generally within the same order of magnitude as historical results, except for the duplicate sample from SD025, which may be an erroneous result. Historical sediment concentrations of PFHxS + PFOS have been displayed graphically on a temporal trend graph (Graph 7.12).



Graph 7.12 Sum of PFHxS and PFOS in sediment sampled during OMP monitoring rounds from 2019-2024

8. Interpretive analysis and discussion

8.1 Groundwater elevations

The variation in SWLs between the seasonal sampling events is displayed in Table 8.1.

Table 8.1 Average SWLs per sampling event

	April		October	
	SWL (mTOC)	SWL (mAHD)	SWL (mTOC)	SWL (mAHD)
2022	12.35	390.70	13.73	390.17
2023	11.80	391.45	12.84	391.15
2024	12.26	390.91	13.26	390.34

The data indicated that SWLs were approximately 1 m higher in April than October. While October typically has a higher average rainfall compared to April (57.1 mm compared to 30.1 mm), the months leading up to April have significantly higher rainfall than those leading up to October. This suggest the response of the OCA aquifer to rainfall is somewhat delayed i.e. displays a hysteretic response. The inference from this is that the SWLs would be expected to rise after October with increased rainfall and fall after the April with decreasing rainfall.

8.2 Groundwater flow direction

The interpreted groundwater flow directions for the Oakey Creek Alluvium aquifer at Swartz Barracks Management Area are shown in Figure 7 and Figure 8 in Appendix A. The contours and flow direction are consistent with the regional groundwater flow direction (east to west) and the elevations observed in previous investigations (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c).

Based on the limited groundwater elevation data for the Walloon Coal Measures, the groundwater flow direction is interpreted to be towards the west.

8.3 Groundwater results

Groundwater results for PFHxS + PFOS compared to assessment criteria for the Oakey Creek Alluvium / Main Range Volcanics and Walloon Coal Measures at the Base are presented in Figure 9 to Figure 12 in Appendix A.

PFAS concentrations were similar to previous historical results undertaken since the ESA (AECOM, 2017a). Temporal changes in PFAS concentrations have been presented in Graph 7.5 to Graph 7.10 and trends were identified through a Mann-Kendall statistical analysis in Table 6, Appendix B.

A summary of the Mann-Kendall results is presented in Table 8.2. For locations where an increasing trend was identified, GHD comments have also been provided in Table 8.3. The results were generally consistent with the previous Mann-Kendall statistical analysis undertaken (AECOM, 2024c).

Table 8.2 Summary of Mann-Kendall Statistical Analysis: PFHxS + PFOS

Location	Bores with an increasing trend	Bores with no trend	Bores with a decreasing trend
On-Base			
Former fire training ground	MW563	MW254[#], MW562	MW253[#]
Former fire station and foam training area	MW204	MW201, MW202, MW203, MW205	-
AFFF storage and decanting area	-	MW221, MW232	MW222, MW230

Location	Bores with an increasing trend	Bores with no trend	Bores with a decreasing trend
Former fuel compound and hot refuel area	-	MW241	MW235, MW236
Hot refuel area and AFFF recovery tank	-	MW172	MW173
AFFF settling tank and AFFF storage tank	MW299	MW300	-
AFFF setting tank (C59)	MW207, MW229	MW198, MW206, MW223	MW193
On-Base Boundary Bores (Oakey Creek Alluvium)	-	MW174, MW178, MW179, MW189, MW249	MW167, MW187, MW233, MW242, MW245, MW252
Off-Base			
Off-Base background bores	-	MW265, MW279	-
Off-Base to the south, down gradient of drainage channels and Oakey Creek	-	MW032*, MW132*, MW267, MW268, MW270, MW278, MW292, MW294	-
Off-Base up and down gradient of landfill	-	MW280, MW281, MW282	-
Off-Base to the west and southwest	MW019*, MW038*, MW151*	MW003*, MW021*, MW056*, MW114*, MW118*, MW122*, MW134*, MW147*, MW149*, MW255, MW257, MW262, MW264, MW266, MW272, MW274, MW283, MW285	MW113*, MW157*, MW276
Underlying aquifers (to south, southwest and west of Base)	-	MW269, MW271, MW273, MW275, MW288, MW289, MW290, MW291, MW293, MW295, MW297	-

Note: * indicates residential bore, # destroyed during remediation works – MW253 and MW254 were sampled between March 2017 and April 2021 and additional bores MW563 and MW562 have been included into the program, respectively

Some wells previously identified as trending up in 2023 by (AECOM, 2024c) were shown as having no trend in this 2024 monitoring period, including MW021, MW134, MW179, MW201, MW249 and MW262. This may be due to differences in the method used to undertake the statistical analysis between AECOM and GHD. Newly trending up monitoring wells were identified for MW151, MW204, MW207, MW229 and MW563.

Given the variability in seasonal data collected in April 2024 (following wet season) versus October 2024 (following dry season), the trends determined through the Mann-Kendall approach do not explain why trends occur or the mechanisms behind the trends. This means that an increase in PFAS does not necessarily indicate migration from a source, it could indicate more PFAS being 'flushed' into a well due to higher recharge. Likewise, a decrease does not indicate mass degradation of PFAS but rather dilution or dispersion effects. Analysis of the trends is shown in Table 8.3. It should be noted that Mann-Kendall has not been utilised to undertake seasonal analysis given the limitation in seasonal data available.

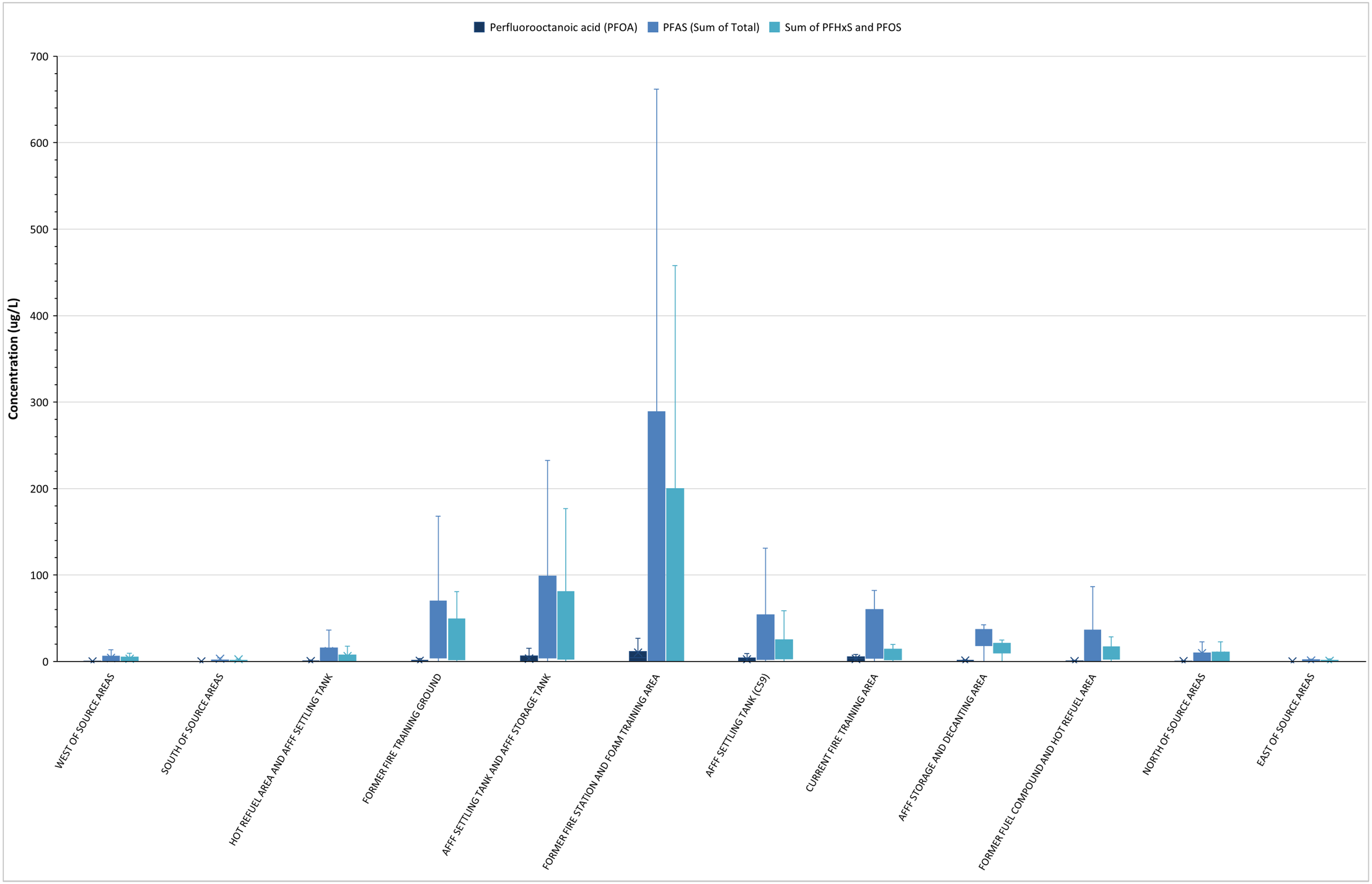
Table 8.3 Comments on groundwater locations indicating increasing or decreasing trends

Location with an increasing trend	Do results and graphs indicate an increasing trend?	Comments
MW563	No	There are insufficient data points to comment on trends for this location. Results from the 2023 and 2024 sampling rounds have been consistent.

Location with an increasing trend	Do results and graphs indicate an increasing trend?	Comments
MW204	Yes	While the data from 2019 onwards when the OMP was implemented indicate that concentrations have increased since 2022, pre-OMP data from 2017 and 2018 show PFHxS + PFOS concentrations (maximum 1,300 µg/L) consistent with results from recent monitoring rounds (maximum 1,500 µg/L). It is possible that the fluctuation in concentrations may be rainfall related, with low rainfall recorded in 2019 (~170 mm) when PFAS concentrations appeared to decrease and high rainfall recorded in 2022 (~850 mm) when PFAS concentrations appeared to increase. However, this trend was not consistently seen across the Base, in this particular area, or in wells with higher PFAS concentrations. It may also be due to groundwater extraction and treatment occurring in this area, which has been operating since 2018 and may have caused the initial decrease in 2019.
MW299	No	While concentrations of PFHxS + PFOS did appear to be trending upwards from 2022 (possibly due to high rainfall as discussed above), results from the April 2024 and October 2024 monitoring rounds were both consistent with the lower historical results. This does not indicate an increasing trend.
MW207	No	While the data from 2019 onwards when the OMP was implemented indicate that concentrations have increased since 2022 (possibly due to high rainfall as discussed above), pre-OMP data from 2017 show PFHxS + PFOS concentrations (maximum 1.08 µg/L) the same order of magnitude as recent results. Since October 2022 PFHxS + PFOS results have fluctuated from 1.35 µg/L (October 2022) to 2.26 µg/L (October 2023), with the most recent results from October 2024 being 2.05 µg/L. This does not indicate an increasing trend.
MW229	No	Although the October 2024 PFHxS + PFOS result was a new maximum (60.8 µg/L), historical concentrations have fluctuated between 21.6 µg/L (July 2019) and 56.6 (October 2023). Since 2022, the October result has typically been higher than the April result, indicating seasonal fluctuations. This does not indicate an increasing trend.
MW019	No	PFHxS + PFOS concentrations appear to have peaked in the October 2022 and April 2023 monitoring rounds (to a maximum of 0.13 µg/L), however recent monitoring results (0.07 µg/L) are consistent with 2018 monitoring results (0.06 µg/L). This does not indicate an increasing trend.
MW038	No	Historical PFHxS + PFOS concentrations at this location have fluctuated over time between 0.45 µg/L (October 2019) and 1.24 µg/L (October 2023), however since October 2021 have been relatively consistent. This does not indicate an increasing trend.
MW151	Yes	This location was showing PFHxS + PFOS concentrations as not detected from October 2018 to October 2022. The October 2024 result was therefore a new maximum (0.05 µg/L). This does indicate an increasing trend as all data has been within the same order of magnitude close to or below the laboratory LOR.

8.3.1 On-Base

The highest PFAS concentrations in the two sampling events of 2024 were detected in monitoring wells located down-hydraulic gradient of the source areas on-Base. PFHxS + PFOS, PFOA and total PFAS concentrations in groundwater near potential on-Base source areas are shown in Graph 8.1. The graph shows concentrations from up gradient to down gradient. Outliers are not shown.



Graph 8.1 ***PFHxS + PFOS, PFOA and total PFAS concentrations in groundwater near potential on-Base source areas (no outliers)***

8.3.1.1 Former fire training area

PFHxS + PFOS concentrations in groundwater at the former firefighting training area ranged between 25 µg/L and 121 µg/L in MW253 between 2017 and 2021. A second well, MW254 recorded concentrations between 1.59 and 31.8 µg/L in the same period. This source area was remediated in 2021 (refer to Section 6.1.3) resulting in the decommissioning of MW253 and MW254, with two replacement monitoring wells installed in February 2022 (MW562 and MW563).

Following remediation, relatively lower concentrations of PFHxS + PFOS concentrations have been observed at MW562/MW563 compared to groundwater results from the previous wells (MW253/MW254). The decrease in PFHxS + PFOS concentrations may be attributed to the remediation of the source area. However, in October 2024, a new maximum (23.2 µg/L) was recorded in MW562, which is the same order of magnitude as historical results in MW253 and MW254. SWL was not significantly different between the April and October 2024 sampling events. Historically the SWL increased in October 2022 sampling event and has been relatively consistent outside of this event. This does not indicate an ongoing decreasing trend and while these concentrations may be influenced by upgradient sources further temporal monitoring data are required to form any conclusions on trends.

8.3.1.2 Former fire station and foam training area

Graph 8.1 shows that the former fire station and foam training area have the highest PFHxS + PFOS concentration of all the source areas at the Base. There is a large range in concentrations and many outliers, which were not plotted. The 2023 OMR (AECOM, 2024c) stated that extraction of groundwater to remove PFAS has been ongoing in this area since 2018 and appeared to result in noticeable decreases in PFAS concentrations in wells MW202, MW203 and MW204 following commencement of the extraction and treatment operations in 2019, although subsequent concentrations from 2020 through to 2023 have stabilised. Results from the 2024 monitoring indicated that PFHxS + PFOS concentrations in MW204 are showing an increasing trend, with no obvious trend in MW201, MW202, MW203 and MW205. As there is no ongoing release of PFAS to ground at this source area, PFAS concentrations in underlying groundwater would be expected to be stable or decrease.

This source area is located in the centre of the Base and may be influenced by upgradient source areas. Remediation is proposed for this area in 2025.

8.3.1.3 AFFF storage and decanting area

There are few groundwater locations in the area of the AFFF storage and decanting area, and MW232 was dry in October 2024. MW221 and MW222 had also been paved over so could not be sampled in October 2024 and will be lost going forward. Results to date indicate no trend or a decreasing trend. There is ongoing extraction of groundwater in this area and the decreasing PFAS concentrations in groundwater in this area may reflect this or are simply related to dispersion effects. It is recommended that additional groundwater monitoring wells be installed in relevant locations to monitor upgradient and downgradient PFAS concentrations in groundwater in the vicinity of the AFFF storage and decanting area.

No remediation or infrastructure works have occurred at this source area that are likely to have influenced the results within the monitoring period, however remediation is proposed for this area in 2025.

8.3.1.4 Former fuel compound and hot refuel area

PFHxS + PFOS concentrations in samples from MW235 and MW236, located close to the former fuel compound and hot refuel area show a decrease from October 2021 to April 2022 and then relatively consistent concentrations from 2022. In MW235 concentrations in October 2024 were 13.2 µg/L compared to historical maximums of 27.8 µg/L in October 2019. In MW236 the historical maximum is 25.9 µg/L, recorded in October 2021 and dropped to a low of 1.42 µg/L in October 2022, however, they appeared to increase again in the October 2024 monitoring round with a result of 17.0 µg/L. PFHxS + PFOS concentrations in MW249 have been relatively consistent, within the same order of magnitude and show no trend.

This is an upgradient source area and is unlikely to be influenced by other source areas. No remediation or infrastructure works have occurred at this source area that are likely to have influenced the results within the monitoring period, however remediation is proposed for this area in 2025.

8.3.1.5 Hot refuel area and AFFF recovery tank

PFHxS + PFOS concentrations at MW172 and MW173 show no or a decreasing trend, however MW173 recorded a new maximum (8.04 µg/L) in October 2024, compared to a historical maximum of 7.03 µg/L in October 2019. This is the most down gradient area and may be influenced by upgradient source areas, however over all PFAS concentrations are lower than other source areas at the Base. Remediation works are proposed in this area in 2025.

8.3.1.6 AFFF settling tank and AFFF storage tank

The dataset indicated variability in PFHxS + PFOS concentrations at MW299 close to the source area between 2018 and 2024. While concentrations of PFHxS + PFOS did appear to be trending upwards from 2022, from 177 µg/L in October 2022 to a new maximum of 277 µg/L in April 2023 and then to 163 µg/L in October 2023, results from the April and October 2024 monitoring rounds were both consistent with the lower historical results at 37 µg/L and 23.8 µg/L, respectively. The same variability was not observed in nearby well MW300, which has shown relatively stable PFHxS + PFOS concentrations. It is noted, however, that the April and October 2024 results were on the lower side of the historical range at 63 µg/L and 68 µg/L, respectively. Although both wells are screened at similar depths, MW299 is screened within a higher permeability lithology (gravelly SAND), whilst MW300 is screened within a lower permeability lithology (silty CLAY). This distinction in lithology and PFAS concentration variability between these two wells may further support the key outcome of the JBS&G investigations. Whereby the OCA is defined as a single heterogeneous aquifer with plume migration concentrated in relatively small zones of the geology.

Given that this area is concrete sealed, ongoing infiltration through potentially impacted soils is unlikely to be an ongoing source of PFAS impact in groundwater. This area may be influenced by other upgradient source areas such as the former fire station.

8.3.1.7 AFFF settling tank (C59)

While the Mann-Kendall statistical analysis showed an increasing trend for MW207 and MW229, these results are discussed in Table 8.3 and results are considered to be variable and not indicative of an increasing trend. Although it is noted that the October 2024 PFHxS + PFOS result was a new maximum (60.8 µg/L), with historical concentrations having fluctuated between 21.6 µg/L (July 2019) and 56.6 (October 2023). Other monitoring locations in this area have been relatively stable (MW193 and MW223) or variable (MW198).

This area is also associated with known hydrocarbon impacts and may be influenced by other source areas.

8.3.1.8 On-Base boundary

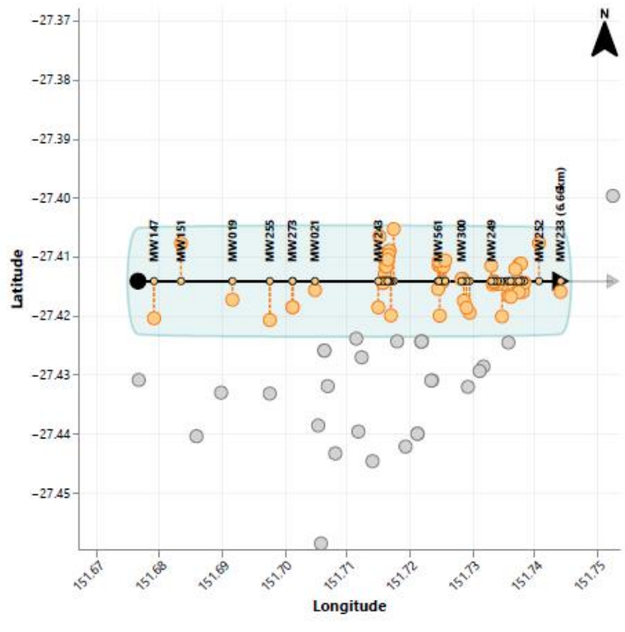
On-Base boundary groundwater monitoring locations have a stable, no trend or a decreasing trend for PFHxS + PFOS concentrations. Graph 8.1 also shows that the locations north, east, south and west of the source areas have some of the lowest PFAS concentrations on the Base, compared to other source areas.

8.3.2 Off-Base

A cross section showing PFHxS + PFOS results above the HEPA (2020) drinking water guidelines as well as detects and non-detects for a 1 km buffer from the eastern edge of the Base to the western boundary of the monitoring network is shown in Graph 8.2.

CROSS SECTION







Graph 8.2 Cross section showing PFHxS + PFOS concentrations from eastern edge of the Base to western boundary of the monitoring network, with a 1 km buffer

*NOTE: Where the depth below ground level is indicated to be 0 m, the screen interval for these wells in unknown and therefore the depth of the well is unable to be show.

PFAS impacts in 2024 are indicated to the west, southwest and south of the Base, which is generally similar to that presented in the ESA (AECOM, 2017a) and subsequent monitoring reports (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c).

The first-time detection of PFHxS + PFOS recorded in April 2023 at MW151 outside the Management Area has shown essentially stable levels despite a 'new maximum' concentration of 0.05 µg/L recorded in October 2024. The result is based on a 0.01 µg/L increase in both PFOS and PFHxS i.e. from 0.02 to 0.03 µg/L PFOS and 0.01 to 0.02 µg/L PFHxS. The results for each compound were marginally above the laboratory LOR of 0.01 µg/L. While they are negligible increases and below the adopted drinking water guideline, the presence of PFAS in MW151 requires further consideration, given it is the most westerly detection to date. Consideration of potential additional monitoring locations in this area is recommended in updates to the OMP. This would allow greater visibility of PFAS movement and concentrations in groundwater to the west of the Base.

The southern extent is uncertain due to the distance between groundwater sampling locations MW038 and MW285 in the southern portion of the Management Area. Consideration of adding groundwater wells to the OMP in this area would be beneficial prior to the next monitoring round to improve understanding of the plume extent and allow for a higher resolution model.

The plume pattern requires further discussion. Typically, PFAS will leach from a source area vertically to groundwater and then forms a dissolved phase plume. The plume then travels by advection in the direction of groundwater flow and gradually spreads out through other processes such as dispersion and diffusion. This describes a simple system. However, the plume pattern can be complicated by:

– The nature of the alluvial aquifer.
– Surface water interactions.
– The presence of other sources.

Alluvial aquifer:

Alluvial aquifers are deposited by river action which involves constantly changing channels, regular flooding events and complex erosion and deposition patterns. This leads to high heterogeneity and anisotropy of hydraulic properties such as hydraulic conductivity both laterally and vertically. Channels of highly transmissive gravels and sands may be buried under silty flood or overbank deposits, and this pattern is repeated over time. An example of a modern meandering braided river system is shown in Plate 1. This river has not only changed flow channels within its current valley but has also 'wandered' over a much larger area laterally over its history, forming a large alluvial plain. This river has not only changed flow channels within its current valley but has also 'wandered' over a much larger area laterally over its history, forming a large alluvial plain.

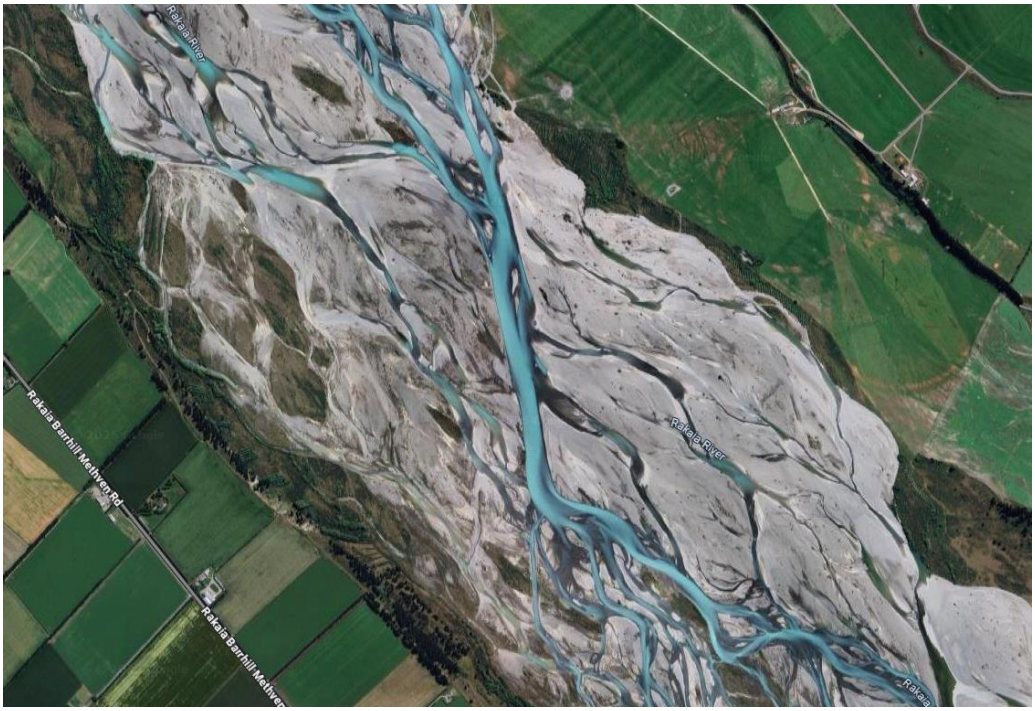


Plate 1 *Meandering braided river system showing the complex pattern of deposition and multiple channel flow areas*

An example of an alluvial deposit in outcrop is shown in Plate 2.

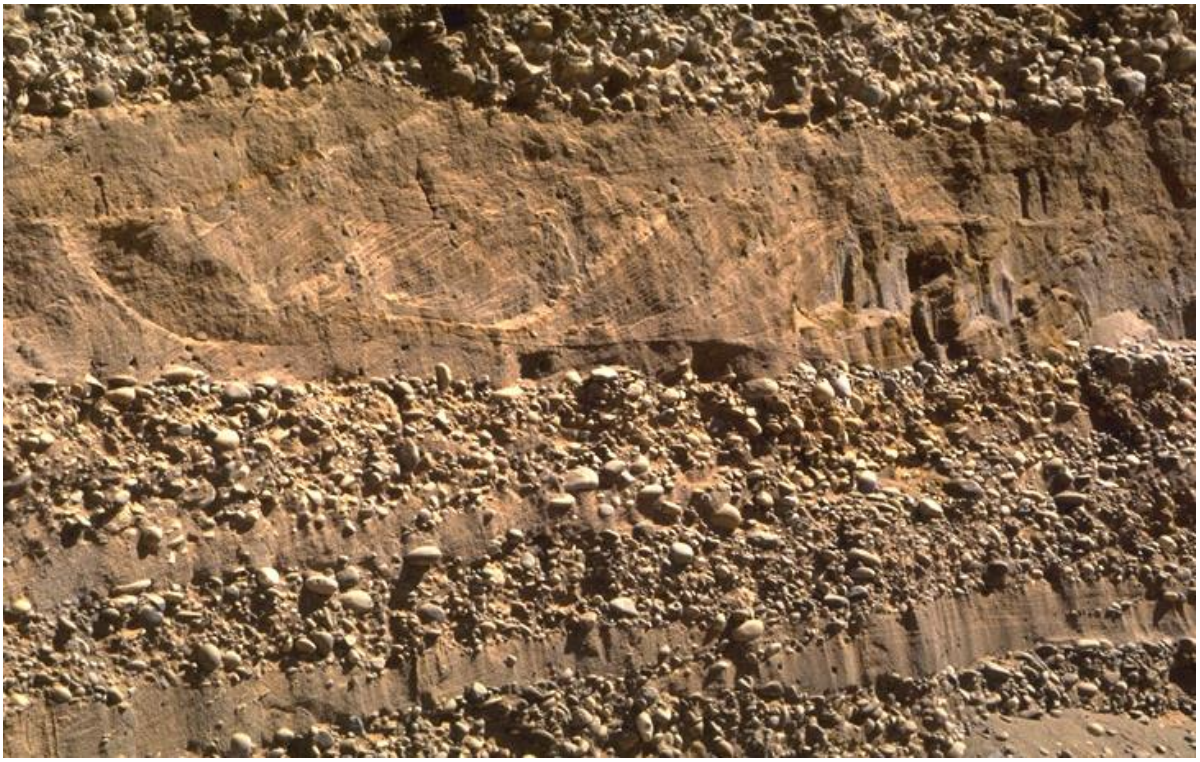


Plate 2 *Interbedded imbricated gravels and cross-bedded sand/silt layers in an alluvial deposit*

From a contaminant perspective, this means contaminant plumes in alluvial systems may not travel in a straight line but rather follow the path of least resistance which may be circuitous. This might be along a buried channel (or paleochannel) consisting of coarser grained material that represents an older river course. Such channels are typically constrained by surrounding finer grained, less permeable material. This heterogeneity means that characterising and modelling groundwater flow in such systems is very difficult and requires a large number of wells to fully understand the subsurface geology. Such characterisation can also be enhanced by geophysical techniques such as resistivity and seismic surveys.

Surface water interactions

It has been shown that PFAS can migrate from sources on the Swartz Barracks site via surface water drains to the Oakey Creek. Along this pathway of constructed drains and within Oakey Creek itself, surface water with dissolved PFAS is able to migrate vertically via infiltration. This can lead to the presence of PFAS in groundwater at locations not directly downgradient of the source areas. It can also produce an apparent groundwater plume of PFAS that is considerably more extensive than would be expected if PFAS migration was solely driven by groundwater advection. This can lead to spurious interpretations of the 'speed' of groundwater and therefore PFAS migration.

Other sources

The Base contains a number of well-documented PFAS source areas. However, there are other land uses in the township of Oakey and surrounds that have the potential to have used PFAS-containing products in the past. These include the fire station, light industrial facilities, and service stations in the township and the former landfill immediately south of the Base.

It is also possible that PFAS-containing groundwater has been extracted and used for irrigation in the area. This could lead to low level diffuse detections in soils and groundwater that has not necessarily originated from groundwater migration.

Summary

The majority of the groundwater monitoring wells and bores sampled in the OMP within the Management Area are in the Oakey Creek Alluvium. However, limited information is available for residential bores so often the aquifer is assumed based on the landowner's knowledge of the depth of the bore. Based on recent groundwater investigations by JBS&G on the western boundary of the Base (JBS&G, 2024a) the Oakey Creek Alluvium has been assessed as a single heterogeneous aquifer. The potential presence of preferential pathways such as paleochannels and their influence on contaminant migration is uncertain.

Table 8.4 summarises the extent of PFAS in different portions of the Management Area and identifies changes compared to previous results. The categorisation of areas is consistent with the SAQP rationale for groundwater monitoring locations.

Table 8.4 PFAS in Oakey Creek Alluvium Aquifer Off-Base

Area Off- Base	Extent of PFAS in the Oakey Creek Alluvium aquifer	Bores / wells
Background bores	PFAS was not detected in the background monitoring well (MW265) in April 2024 indicating there are no up-gradient sources of PFAS migrating onto the Base. MW279 was not found in April 2024 and was not sampled, however PFAS has not historically been detected at this location.	MW265, MW279
South of the Base – down gradient of drainage channels and Oakey Creek	The extent of PFAS in groundwater is unchanged compared to previous results in locations adjacent to the drainage channels and Oakey Creek. Wells in this area typically show a stable or no trend in PFHxS + PFOS concentrations. PFHxS + PFOS concentrations in MW132 recorded a new maximum in May 2024 at 11.4 µg/L compared to a historical high of 0.2 µg/L in April 2022. This is a similar order of magnitude to historical results at MW032 and MW276, which are located further down gradient than MW132. These three locations represent the highest concentrations in this area. PFHxS + PFOS concentrations in MW268 also recorded a new maximum in May 2024 at 0.74 µg/L, however this is only marginally above the historical high of 0.73 µg/L recorded in March 2020 and April 2023. MW032 and MW270 were not sampled in 2024.	MW032, MW132, MW267, MW268, MW270, MW278, MW292, MW294
Up and down gradient of landfill	The extent of PFAS in groundwater in April 2024 is unchanged compared to previous results. Wells in this area typically show a stable or no trend in PFHxS + PFOS concentrations. New minimum PFHxS + PFOS concentrations were recorded at MW280 (0.16 µg/L) and MW281 (2.47 µg/L) in April 2024, compared to historical lows of 0.20 µg/L (March 2020) in MW280 and 3.36 µg/L (April 2022) in MW281. MW281 is the location down gradient of the landfill and does have the highest results, indicating that the landfill may be a source of PFAS in groundwater.	MW280, MW281, MW282

Area Off- Base	Extent of PFAS in the Oakey Creek Alluvium aquifer	Bores / wells
West and southwest of the Base	The extent of PFHxS + PFOS above drinking water guidelines in groundwater appears to cover a larger area than what was previously shown in the 2023 OMR (AECOM, 2024c). Further groundwater assessment will be undertaken in 2025 with an updated model and plume extent an output of this assessment. The Mann-Kendall statistical analysis indicated an increasing trend in PFHxS + PFOS concentrations in MW019, MW038 and MW151. An assessment of the results to date and whether this is considered a significant trend was discussed in Table 8.3, with MW151 considered to show a potential increasing trend. The Mann-Kendall statistical analysis indicated a decreasing trend in PFHxS + PFOS concentrations in MW113, MW157, MW276. Results from MW113 showed a new minimum PFHxS + PFOS concentration in April 2024 of 0.27 µg/L compared to a historical minimum of 0.36 in April 2023. Results from MW157 in April 2024 showed a new minimum PFHxS + PFOS concentration of 5.50 µg/L compared to a historical minimum of 8.93 µg/L in April 2023. Results from MW276 were the lowest recorded in both April and October 2024, however were in the same order of magnitude as historical results. All three locations may indicate a decreasing trend. MW113 and MW157 are located a similar distance off the western boundary of the Base and MW276 in located in a similar alignment to the southwest of the Base. All other locations showed a stable or no trend in PFHxS + PFOS concentrations.	MW003, MW019, MW021, MW038, MW056, MW113, MW114, MW118, MW122, MW134, MW147, MW149, MW151, MW157, MW255, MW257, MW262, MW264, MW266, MW272, MW274, MW276, MW283, MW285

8.3.3 PFAS in underlying aquifers

Overall, the sampling results for wells in deeper aquifers in the 2024 monitoring period are consistent with historical results reported between 2018 and 2023.

PFHxS + PFOS concentrations in 2024 in wells from the deeper aquifers were generally below or marginally above the laboratory LOR, with the exception of MW269. PFHxS + PFOS concentrations in MW269 have been in the range 0.05 µg/L to 0.14 µg/L between October 2018 and October 2024, exhibiting a stable trend. MW269 is located close to drainage channel 1 and approximately 400 m to the south of the Base and has shown PFAS detections since April 2018. In the 2023 OMR (AECOM, 2024c) AECOM reported that a purging event was completed in September 2018 to remove water containing PFAS in this bore based on indications that the contamination in the bore may have been introduced during its construction e.g. drilling muds impacted by PFAS. The results since the purging have generally been lower than the maximum concentration detected. The reduction in PFAS concentrations suggests that the detections could be associated with the bore construction materials and are not indicative of continuous or historical vertical migration to the deeper aquifers.

Occasional low-level detections of PFAS (close to the LOR) have been reported in groundwater samples collected from the deeper aquifers since monitoring wells were installed in 2017. The mass in the deeper aquifers is likely to be negligible.

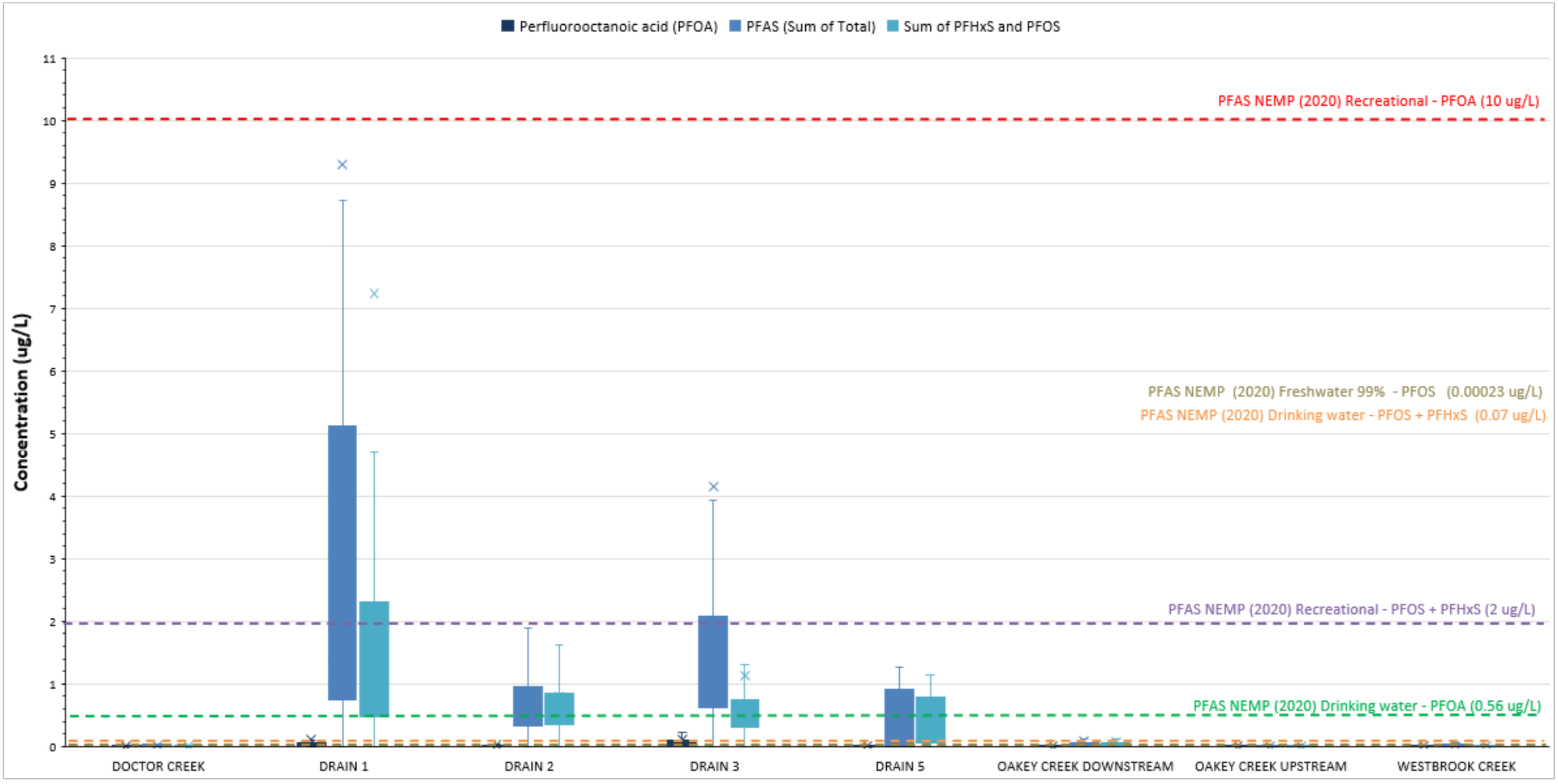
8.3.4 Seasonality

The OMP outlines biannual sampling, once in April to target post-wet season conditions, and once in October to target post-dry season conditions. It is noted that southern Queensland is less impacted by wet season and dry season compared to north Queensland, however as outlined Section 6.4 the summer months do have higher rainfall on average than the winter months.

Graphs 7.5 to 7.10 in Appendix A show PFHxS+ PFOS concentrations against monthly rainfall. These graphs show that periods of high rainfall do often result in a spike in PFHxS + PFOS concentrations and lower rainfall preceding a sampling event often results in lower PFHxS + PFOS concentrations. However this is not consistent across all monitoring locations and the data does not show a significant statistical difference between seasons.

8.4 Surface water and sediment results

Surface water and sediment results for PFAS in April 2024 are provided in Figures 9 and 10 in Appendix A. Full analytical results for surface water and sediment are shown in Table 4 and Table 5 in Appendix B. The results are discussed per area (i.e. creeks and drainage channel) consistent with the SAQP nominated monitoring locations. Surface water results for each area (without outliers), since 2019, are shown in Graph 8.3.



Graph 8.3 ***All surface water results post remediation (2019-2024) – by investigation area, no outliers shown***

8.4.1 Surface water: drainage channels

The highest PFHxS + PFOS concentration in surface water in March/April 2024 was reported in the on-Base sample from drainage channel 1 (SW066 at 1.84 µg/L). A summary of PFHxS + PFOS reported at the drainage channels in 2024 is presented in Table 8.5 below.

Table 8.5 Summary of PFHxS + PFOS in Drainage Channels

Drainage channel	PFHxS + PFOS range in 2024	PFHxS + PFOS – Historical range	Results within historical range
1	0.57 to 1.84 µg/L	0.5 to 5.76 µg/L	Yes
2	0.379 to 0.65 µg/L	0.29 to 3.23 µg/L	Yes
3	0.67 µg/L	0.26 to 0.69 µg/L	Yes
4	No samples	No samples	-
5	0.67 µg/L	0.0965 to 2.18 µg/L	Yes

Graph 8.3 shows that drain 1 has the highest PFAS concentrations of all the on-Base drains. However, PFAS results in surface water from the April 2024 monitoring were generally lower in the on-Base drainage channels than the historical maximum concentrations. SW066 recorded a new maximum PFHxS + PFOS concentration of 1.84 µg/L in March 2024. This was re-sampled in April 2024 with results an average of 1.16 µg/L, which was within the historical range.

The drainage channels underwent remediation works in 2018, which may have resulted in a decrease in PFAS mass flux in surface water. Remediation works in some source areas is proposed for 2025, which may result in decreases in PFAS concentrations in surface water. Ongoing monitoring will be required post-remediation to assess this.

8.4.2 Surface water: creeks

The highest PFHxS + PFOS concentration in surface water samples from creeks in March/April 2024 was 0.4 µg/L at SW013, which is located at the outfall of drainage channel 5 (Figure 6 and Figure 10, Appendix A).

The results indicate the following:

– Oakey Creek:
  - Upstream of the outflow of drainage channel 3: PFAS have not been detected above the laboratory LOR at SW032 or SW040 since the OMP was implemented in 2019. SW040 is considered representative of background PFAS conditions in the creek prior to any influence from the Base.
  - Downstream of drainage channels 1, 2 and 3: A new maximum PFHxS + PFOS concentration was detected at SW056 (0.06 µg/L), at the outfall of drainage channel 3, which had been non-detect in April 2022 and April 2023. All five surface water samples collected reported PFAS, with the sample collected from the outfall of drainage channel 5 (SW013) recording the highest PFOS concentration (0.4 µg/L).
  - Downstream of confluence of Westbrook Creek: PFAS was not detected above the LOR in the two surface water samples analysed (SW004 and SW059). The non-detect in MW059 was a new minimum.
– Doctor Creek:
  - PFAS was not detected in the single surface water sample collected from Doctor Creek (SW043) in April 2024.
– Westbrook Creek:
  - PFAS was not detected in the single surface water sample collected (SW028).

Overall, the results show the highest PFAS concentrations in surface water are present at monitoring locations within 1.5 to 3 kilometres downstream of the outflow point of drainage channels 1, 2 and 3. The concentrations decrease with increasing distance downstream from the Base. The furthest downstream sample collected (SW004), approximately 6.5 km downstream from the Base has consistently reported PFOS concentrations close to, or below, the LOR.

Graph 7.11 shows the change in PFHxS + PFOS concentrations in surface water at each of the monitoring locations between 2019 and 2024. Concentrations have been variable and are likely to reflect changes in PFAS mass in surface water discharging via the drainage channels and variable flow conditions in the creek. The data generally shows a decrease in concentrations in 2022, following a period of high rainfall, indicating that significant rainfall events impact the concentrations of PFHxS + PFOS in downstream locations.

8.4.3 Sediment

The highest PFHxS + PFOS concentration in sediment reported in 2024 was 0.0498 mg/kg in SD106, along drainage channel 1, which is lower than concentrations recorded in 2021, 2022 and 2023 (refer to Table 5, Appendix B).

There were new maximum PFHxS + PFOS concentrations recorded at the following locations:

– SD032 (0.0003 mg/kg) – this is a first-time detection and is located at the outfall of drainage channel 4. Given that this location is a relatively up gradient location, this should be monitored in 2025 to determine if there appears to be an increasing trend, or if this was a single event.
– SD083 (0.0285 mg/kg) – located in drainage channel 3. This sample was collected in March and based on these results appears to have been re-sampled in April, however based on changing locations over time it appears the location was labelled SD025 upon re-sample. See commentary below discussing results from SD025.
– SD107 (0.0456 mg/kg) – located in drainage channel 3.
– SD108 duplicate (0.0377 mg/kg) – located in drainage channel 3. This sample was collected in March and based on these results appears to have been re-sampled in April, however based on changing locations over time it appears the location was labelled SD016 upon re-sample.

It is unclear if works were undertaken upgradient of drainage channel 3 prior to the sampling event that may have caused increased PFAS concentrations in sediment but this should be monitored in 2025 to determine if there appears to be an increasing trend, or if this was a single event.

Results for SD025 were highly variable, with PFHxS + PFOS concentrations of 0.0098 mg/kg in the primary sample collected, which is a new minimum concentration and 1.24 mg/kg recorded in the duplicate sample, which is a new maximum concentration. The 2024 results at this location are considered unreliable based on this variability. Sampling undertaken in 2025 should look to confirm actual sediment concentrations in this location.

PFHxS + PFOS concentrations in sediment from the single location in Doctor Creek (SD007) were below the detection limit, as was the location in upgradient Oakey Creek (SD040).

A summary of PFAS results for the drainage channels and creeks for the period 2019 to 2023 and 2024 results compared to 2015-2018 period results is shown in Table 8.6. Data have been grouped into these time periods to compare results before the on-Base drainage channels were remediated in 2018 and post- remediation. The remediation included the removal of approximately 12,000 m^3 of sediment and soil. Graph 8.4 also shows the PFAS concentrations post-remediation, from 2019 onwards.

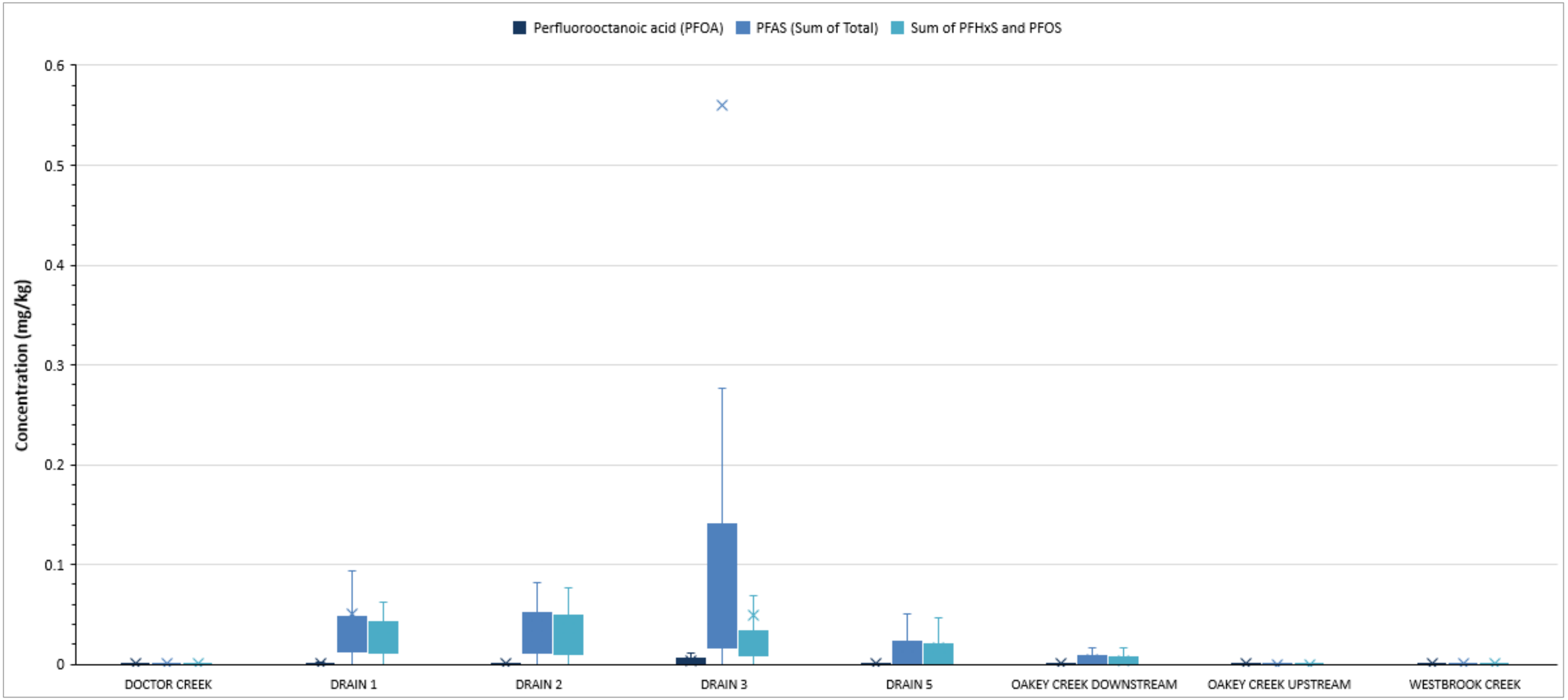
Table 8.6 Summary of Sediment Results: 2015 to 2024

Location	2015 to 2018		2019 to 2023		2024	
	No of samples	Range of PFOS (mg/kg)	No of samples	Range of PFOS (mg/kg)	No of samples	Range of PFOS (mg/kg)
Drainage Channel 1	10	0.032 to 0.13	15	0.0038 to 0.152	4	0.003 to 0.0484
Drainage Channel 2	11	0.001 to 0.492	20	0.0011 to 0.0997	7	0.0084 to 0.0411
Drainage Channel 3	12	0.001 to 3.68	20	0.0004 to 0.0649	12	0.0064 to 1.24
Oakey Creek	35	<0.0002 to 0.021	41	<0.0002 to 0.0746	8	<0.0002 to 0.0083
Doctor Creek	21	<0.0002 to 0.0072	5	<0.0002 to 0.0005	1	<0.0002

Location	2015 to 2018		2019 to 2023		2024	
	No of samples	Range of PFOS (mg/kg)	No of samples	Range of PFOS (mg/kg)	No of samples	Range of PFOS (mg/kg)
Westbrook Creek	1	0.0007	5	0.0002 to 0.0011	1	0.0011

Temporal trend analysis of sediment PFAS contamination is compromised by the inherent uncertainties associated with sedimentary dynamics and depositional variability. Sedimentary environments are characterized by multiple cycles of deposition and erosion. Consequently, individual sampling events during the OMP may intercept recently deposited sediments or material exposed through erosional processes at the same location used in previous OMP events. This introduces both spatial and temporal heterogeneity into the dataset. In the absence of comprehensive characterization of the depositional regime at each sampling location, direct comparisons between data from successive OMP events lacks statistical rigour.

Hence, the value of sediment sampling on a campaign basis each OMP may not be the best approach to understanding risks. A more robust assessment approach is recommended, employing vertical profiling of PFAS distribution coupled with sediment characterisation (grain size, organic matter context etc) throughout the sediment column at strategically selected locations along Oakey Creek. Each discrete depth interval represents a distinct unit, preserving a record of environmental conditions at the time of deposition. Integration of PFAS concentration data with sediment parameters would enable reconstruction of the depositional history and facilitate retrospective assessment of PFAS loading patterns within the Oakey Creek system.



Graph 8.4 ***All sediment results post remediation (2019-2024) – by investigation area, no outliers shown***

Graph 8.4 shows that total PFAS concentrations are highest in drainage channel 3, but that the PFAS composition contains less PFHxS + PFOS than drainage channels 1 and 2.

8.5 Conceptual site model

A CSM was developed during the initial investigation stages (AECOM, 2017a). The OMP and the PMAP are currently being updated and will be finalised in 2025. The CSM summarises the linkages between the sources, exposure pathways and receptors.

The sources of PFAS are well understood at the Base and are discussed in Section 2.4 and throughout this report. PFAS are present in soil, surface water and groundwater at each source due to the historical storage and use of AFFF. It is likely that more than one AFFF product was used on the base:

– A PFHxS + PFOS dominant AFFF
– A fluorotelomer-based AFFF

The numerous components of each AFFF are found in most media sampled as part of the ongoing monitoring program.

PFAS from the AFFF undergoes few transformations in the environment due to their resistance to degradation. However, some PFAS, referred to as precursors, do degrade to terminal PFAS products such as PFOS and PFOA. The general low detection rate of these precursor compounds suggests any transformations are likely to have largely occurred. This however only refers to the limited number of precursors regularly analysed by laboratories.

PFAS behaviour in the environment largely relates to their chain length and alkyl head group. Typically, longer chain PFAS will tend to sorb more readily to soil particles than shorter chain PFAS. The shorter chain PFAS are also more soluble. Hence, longer chain PFAS may remain in the soil for longer periods whereas the lighter, shorter chain species are more readily mobilised. This is evidenced at the site by the predominance of shorter chained PFAS in groundwater and surface waters (i.e. those with a carbon chain length equal to or less than eight carbons long). Hence, given the variability in the solubility and sorption kinetics due to the molecular structure of individual PFAS, not all of the mass of PFAS released at a source zone will migrate at the same rate or the same distance as other PFAS.

PFAS that is mobilised in surface water and groundwater can migrate from the source areas. Typically, surface water will disperse PFAS further and faster than groundwater migration which is a very slow process. Hence, some inferred groundwater plumes appear larger than expected due to interaction between the aquifer and impacted surface water discharging into the aquifer distal to the source areas. In addition, other sources of PFAS are likely to exist in the local township, notably the fire station, industrial properties and landfill, which may lead to co-mingled plumes. Therefore, the interpreted size of the PFAS plume may not be entirely due to advective migration of PFAS in groundwater from the on-Base sources.

The main aquifer under the Base and the local area is the Quaternary age Oakey Creek Alluvium (OCA). Alluvial aquifers are typically complex and have high anisotropy and heterogeneity. The OCA is no exception to this and displays ranges of lithologies from gravels to clays. Some previous reports have indicated the OCA aquifer has two hydrostratigraphic units - an upper layer which tends to have a higher clay content, overlying a lower layer which has a higher percentage of sands and gravels, with grain size generally increasing with depth (AECOM, 2023c). Due to this difference in texture, the upper OCA generally has a lower hydraulic conductivity and lower groundwater yields than the lower layer, making the lower OCA the primary groundwater resource in the Oakey area. Other reports have indicated that overall the Oakey Creek Alluvium is highly variable and interconnected and did not define an upper and lower aquifer within this unit (JBS&G, 2024a). This variability further supports the need for further assessment to increase understanding of PFAS migration.

Borelogs have also indicated that some transmissive zones with the aquifer are not necessarily continuous. This leads to a large degree of uncertainty when it comes to modelling such systems. With widely spaced wells, the empirical observations of PFAS in the wells over time provide the best understanding of PFAS migration in ground water. The temporal data has largely indicated a stable plume. Therefore, whilst some off-Base wells have shown recent detections (e.g. MW151), further investigation is required in the west and south to fully understand the potential for other sources of PFAS and other influences on PFAS distribution and migration in off-Base areas. Including, the potential contribution to the PFAS plume from other potential off-Base sources, and potential interactions with surface water or irrigation waters.

An updated CSM is presented in Table 8.7.

Table 8.7 Conceptual Site Model

Primary sources	Secondary sources	Exposure pathways	Receptors	SPR linkage complete
On-Base PFAS sources	PFAS in soil	Ingestion	On-Base – workers and visitors	Potentially complete
			Off-Base – residents	Unlikely complete
			Ecological	Complete
		Direct contact	On-Base – workers and visitors	Complete
			Off-Base – residents	Unlikely complete
			Ecological	Complete
	PFAS in groundwater	Ingestion (direct)	On-Base – workers and visitors	Incomplete
			Off-Base – residents	Unlikely complete
			Ecological	Incomplete
		Ingestion (incidental)	On-Base – workers and visitors	Potentially complete
			Off-Base – residents	Complete
			Ecological	Incomplete
		Direct contact	On-Base – workers and visitors	Complete
			Off-Base – residents	Unlikely complete
			Ecological	Incomplete
	PFAS in surface water	Ingestion	On-Base – workers and visitors	Unlikely complete
			Off-Base – residents	Potentially complete
			Off-Base – recreational users of Oakey Creek	Complete
			Ecological	Complete
		Direct contact	On-Base – workers and visitors	Complete
			Off-Base – residents	Complete
			Off-Base – recreational users of Oakey Creek	Complete
			Ecological	Complete
	PFAS in sediment	Ingestion	On-Base – workers and visitors	Potentially complete
			Off-Base – residents	Potentially complete
			Off-Base – recreational users of Oakey Creek	Complete
			Ecological	Complete
		Direct contact	On-Base – workers and visitors	Complete
			Off-Base – residents	Complete

Primary sources	Secondary sources	Exposure pathways	Receptors	SPR linkage complete
			Off-Base – recreational users of Oakey Creek	Complete
			Ecological	Complete
Off-Base PFAS sources		Migration to soil, groundwater, surface water and sediment	Off-Base residents, recreational users of Oakey Creek and ecological receptors	Likely complete

8.6 Discussion

The main objective of the OMP is to provide data to allow for an understanding of risks posed by PFAS in each environmental media. This data will be used to define management approaches.

The Base itself has a large and well-established monitoring network of sampling locations and a decent temporal data set such that trends in PFAS distribution can be established with some certainty. Further west off-Base, however, the well network is significantly reduced and there is a reliance on government bores and access to private bores to assess PFAS extent. This is particularly important when assessing groundwater in such a complex aquifer system. This well distribution does limit the ability to assess migration trends and means inputs for numerical modelling will be compromised. In other words, without more sampling locations, any hydrogeological model will retain significant uncertainty.

It is recommended therefore that additional bespoke bores be installed at strategic locations to the west of the Base as well as consideration of adding private bores in future OMPs.

9. Summary and conclusions

9.1 Summary

This OMR provides an interpretation of groundwater, surface water and sediment results from monitoring completed as part of the OMP during 2024. Ongoing monitoring provides a mechanism for Defence to monitor changes over time and the efficacy of remediation efforts undertaken at source areas.

PFAS concentrations in groundwater, surface water and sediment are generally consistent with previous results reported in 2020, 2021, 2022 and 2023 (AECOM, 2021; AECOM, 2022a; AECOM, 2024b; AECOM, 2024c), with the following exceptions:

Groundwater:

– New maximum PFHxS + PFOS concentrations were reported in groundwater at MW562, MW132 (both in April 2024) and in MW173, MW229, MW252, MW151, MW262, MW268 (in October 2024). MW562 and MW173 are both located in the vicinity of the hot refuel area and AFFF settling tank, a known source area, but are not currently indicative of increasing trends. MW252 is an upgradient on-Base well and while no increasing trend has been identified should continue to be monitored as elevated concentrations in this area may indicate an unknown source. MW229 is located on-Base to the south of known source areas and does not currently indicate an increasing trend. Off-Base locations MW132, MW262 and MW268 are considered to be in the middle of the known plume and will continue to be monitored for potential increasing trends. MW151, however is on the western edge of the plume and does indicate an increasing trend. While concentrations are currently below drinking water guidelines this location should be monitored and further considered in plume migration and risk assessment in future.

Surface water:

– Generally, concentrations of PFAS within surface water remained consistent with previous monitoring data, with new maximum concentrations (at SW057 located in drainage channel 3, SW056 located at the outflow of drainage channel 3 and SW066 on-Base in drainage channel 1) limited in magnitude compared with historical observations.

Sediment:

– Concentrations of PFAS within sediment remained consistent with previous monitoring data, except for new maximum PFHxS + PFOS concentrations that were reported in sediment at SD025, SD083, SD107 and SD108. All four locations are on-Base within drainage channel 3 and it is possible that on-Base works resulted in increased PFAS in sediment during this monitoring period. SD025 and SD083 are considered to be the same location and results from SD025 are not considered to be reliable. Additional monitoring will determine whether increases in PFAS concentrations in sediment within drainage channel 3 are indicative of an increasing trend or a single event.

9.2 Conclusions

The data collected during the current monitoring period has shown no significant changes to concentrations of PFAS across the monitoring program. The data does indicate uncertainty to the extent of the spatial distribution of PFAS. The new maximum concentration recorded at MW151 indicates that there is likely western migration of the plume and should continue to be monitored for increasing trends and potential for drinking water exceedances. This is the western most location monitored and the spatial distribution of wells in this location show large distances between monitoring locations.

Based on the data, GHD considers that the conclusions and risk profile outlined in the 2017 ESA (AECOM, 2017a), HHRA (AECOM, 2017b) and ERA (AECOM, 2018) still apply. However, that the variability in the understanding of the heterogeneity of the hydrogeological system between previous investigations supports the need for further assessment to increase understanding of PFAS migration. The review of the OMP in 2025 should consider additional locations to increase modelling resolution that can be achieved on future plume modelling programs of works as well as understanding the nature and extent of the plume to the west and south of the Base.

The data collected during the ongoing monitoring program in 2024 suggest that the risk profile to human health and ecological receptors at Swartz Barracks and within the Management Area is unchanged as there were no new exceedances of the adopted guidelines.

10. References

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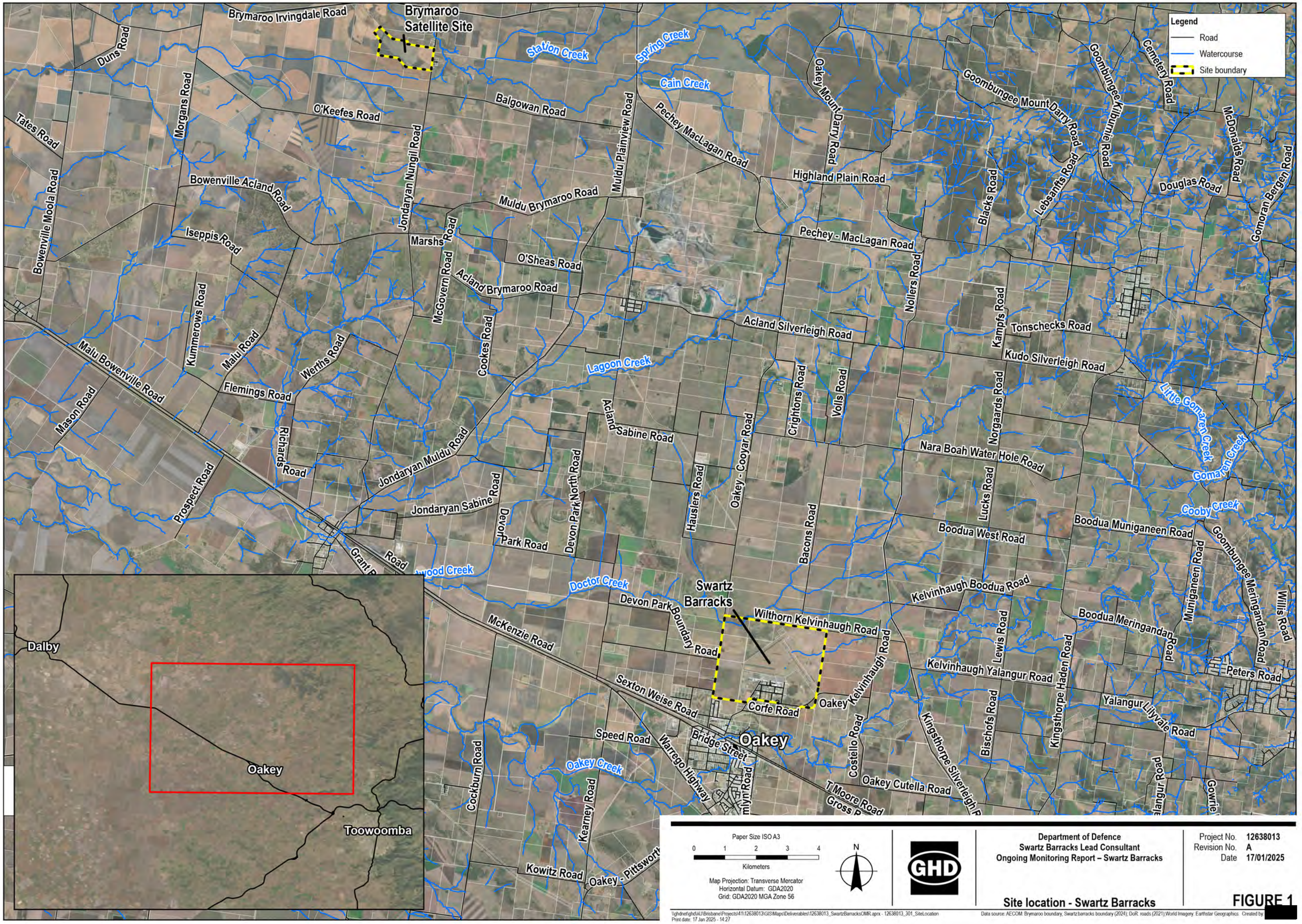
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Appendices

Appendix A

Figures



Paper Size ISO A3

0 1 2 3 4

Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

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GHD

Department of Defence
Swartz Barracks Lead Consultant
Ongoing Monitoring Report – Swartz Barracks

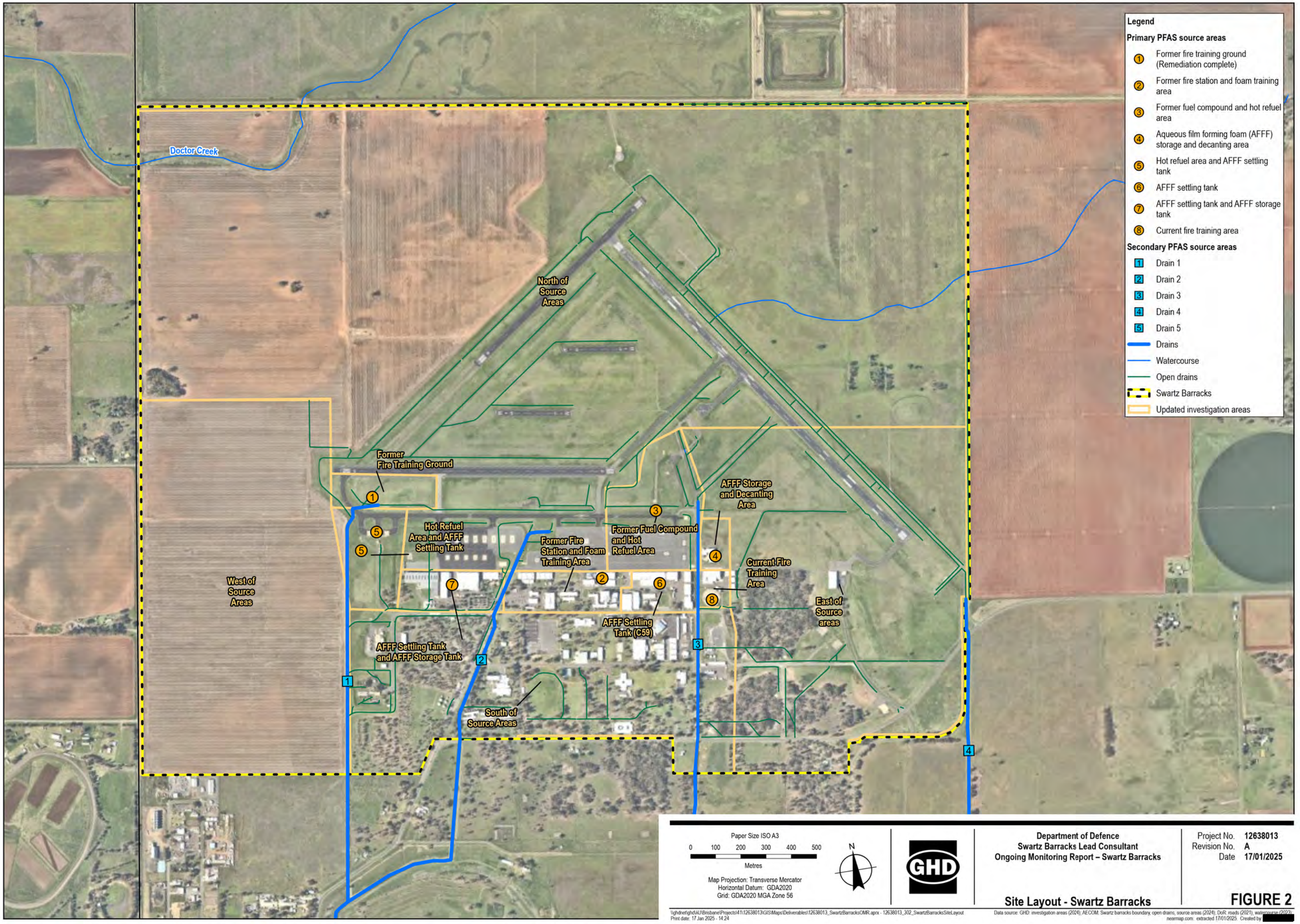
Project No. 12638013
Revision No. A
Date 17/01/2025

Site location - Swartz Barracks

FIGURE 1

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Print date: 17 Jan 2025 - 14:27

Data source: AECOM: Brymaroo boundary, Swartz barracks boundary (2024); DoR: roads (2021); World Imagery: Earthstar Geographics. Created by: [redacted]



Paper Size ISO A3

0 100 200 300 400 500

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

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Ongoing Monitoring Report – Swartz Barracks

Project No. **12638013**
Revision No. **A**
Date **17/01/2025**

Site Layout - Swartz Barracks

FIGURE 2

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_302_SwartzBarracksSiteLayout
Print date: 17 Jan 2025 - 14:24

Data source: GHD: investigation areas (2024); AECOM: Swartz barracks boundary, open drains, source areas (2024); DoR: roads (2021), watercourse (2023); nearmap.com: extracted 17/01/2025. Created by [redacted]

MANAGEMENT ZONE 1
ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors
for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from back yard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek
- Drinking home grown milk

MANAGEMENT ZONE 2
ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors
for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from back yard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek

MANAGEMENT ZONE 3
ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Eating fish from Oakey Creek

Management Zone 1

Management Zone 2

Management Zone 3

Old Warrego Highway

Warrego Highway

Oakey Creek

Westbrook Creek

Gowrie Creek

Legend

Primary PFAS source areas

1. Former fire training ground (Remediation complete)
2. Former fire station and foam training area
3. Former fuel compound and hot refuel area
4. Aqueous film forming foam (AFFF) storage and decanting area
5. Hot refuel area and AFFF settling tank
6. AFFF settling tank
7. AFFF settling tank and AFFF storage tank
8. Current fire training area

Secondary source areas

1 Drain 1
2 Drain 2
3 Drain 3
4 Drain 4
5 Drain 5
6 Cooby creek
7 Oakey creek downstream
8 Oakey creek upstream
9 Westbrook creek
A Farm dam
B Former non-defence fire training area
C Former trade waste system
D Former landfill

Open drains
Major watercourse
Minor watercourse
Site drains
Site boundary
Management area

Management zones

Management Zone 1
Management Zone 2
Management Zone 3

Paper Size ISO A3

0 250 500 750 1,000

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

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Ongoing Monitoring Report – Swartz Barracks

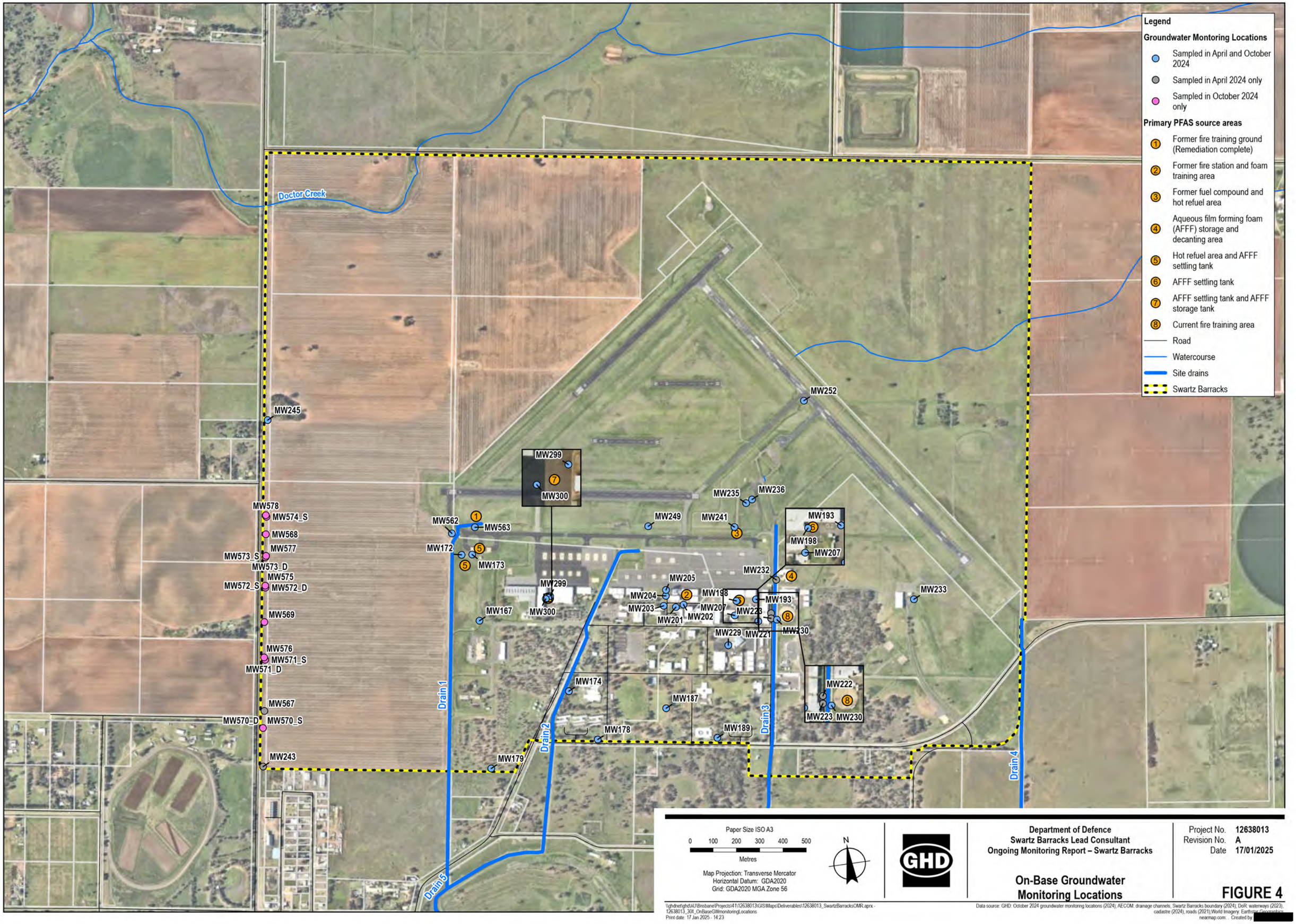
Project No. **12638013**
Revision No. **A**
Date **17/01/2025**

Swartz Barracks Management Zones

FIGURE 3

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Print date: 17 Jan 2025 - 15:44

Data source: AECOM: open drains, swartz barracks boundary, management zones; PFAS source areas, management area (2024); DoR: cadastre (2024), watercourse (2023); nearmap.com - Created by [redacted]



Paper Size ISO A3

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

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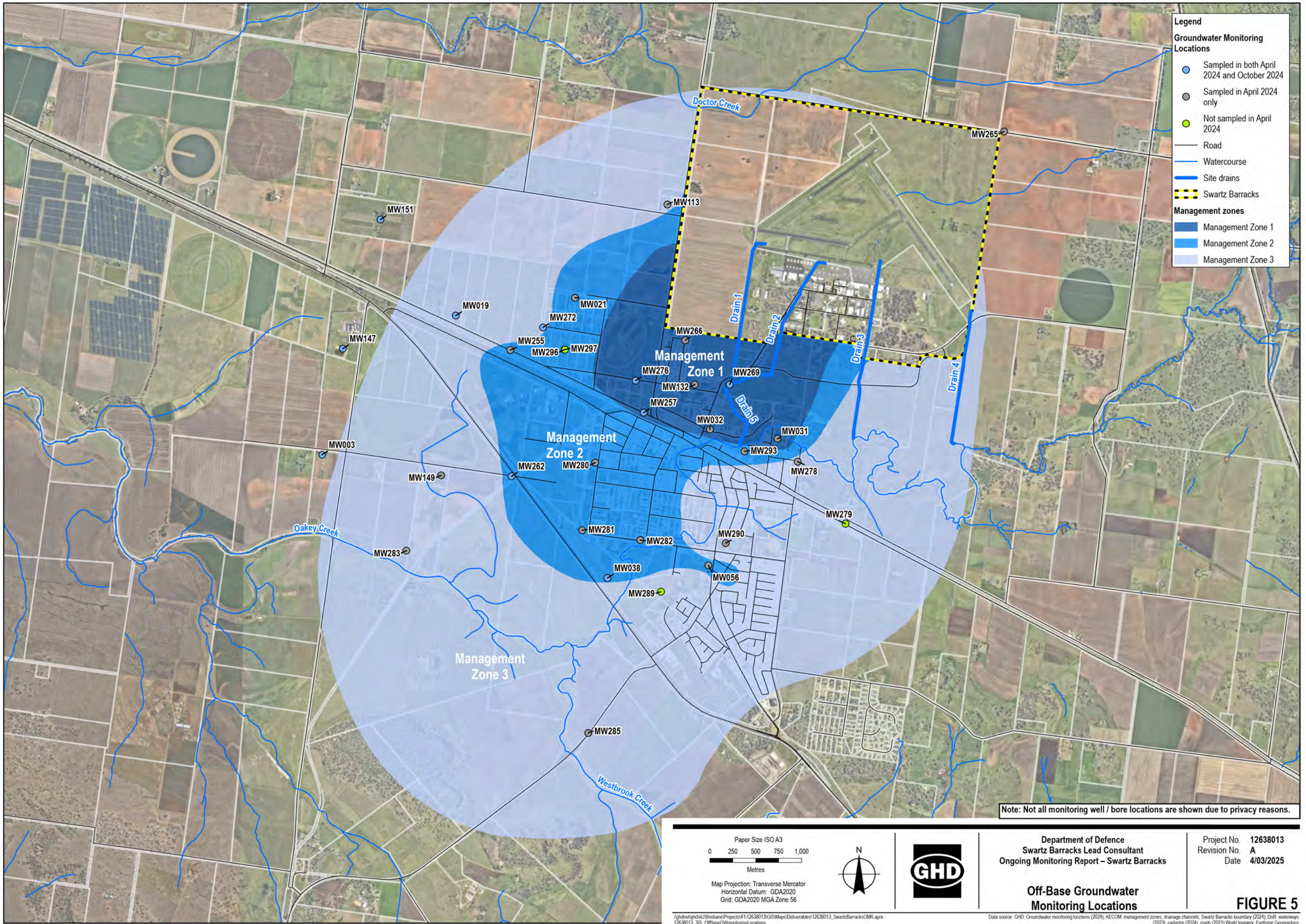
On-Base Groundwater Monitoring Locations

Project No. 12638013
Revision No. A
Date 17/01/2025

FIGURE 4

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_304_OnBaseGWmonitoringLocations
Print date: 17 Jan 2025 - 14:23

Data source: GHD: October 2024 groundwater monitoring locations (2024), AECOM: drainage channels, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics, nearmap.com: . Created by [redacted]



Note: Not all monitoring well / bore locations are shown due to privacy reasons.

Paper Size ISO A3

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Metres

Map Projection: Transverse Mercator
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Grid: GDA2020 MGA Zone 56

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Ongoing Monitoring Report – Swartz Barracks

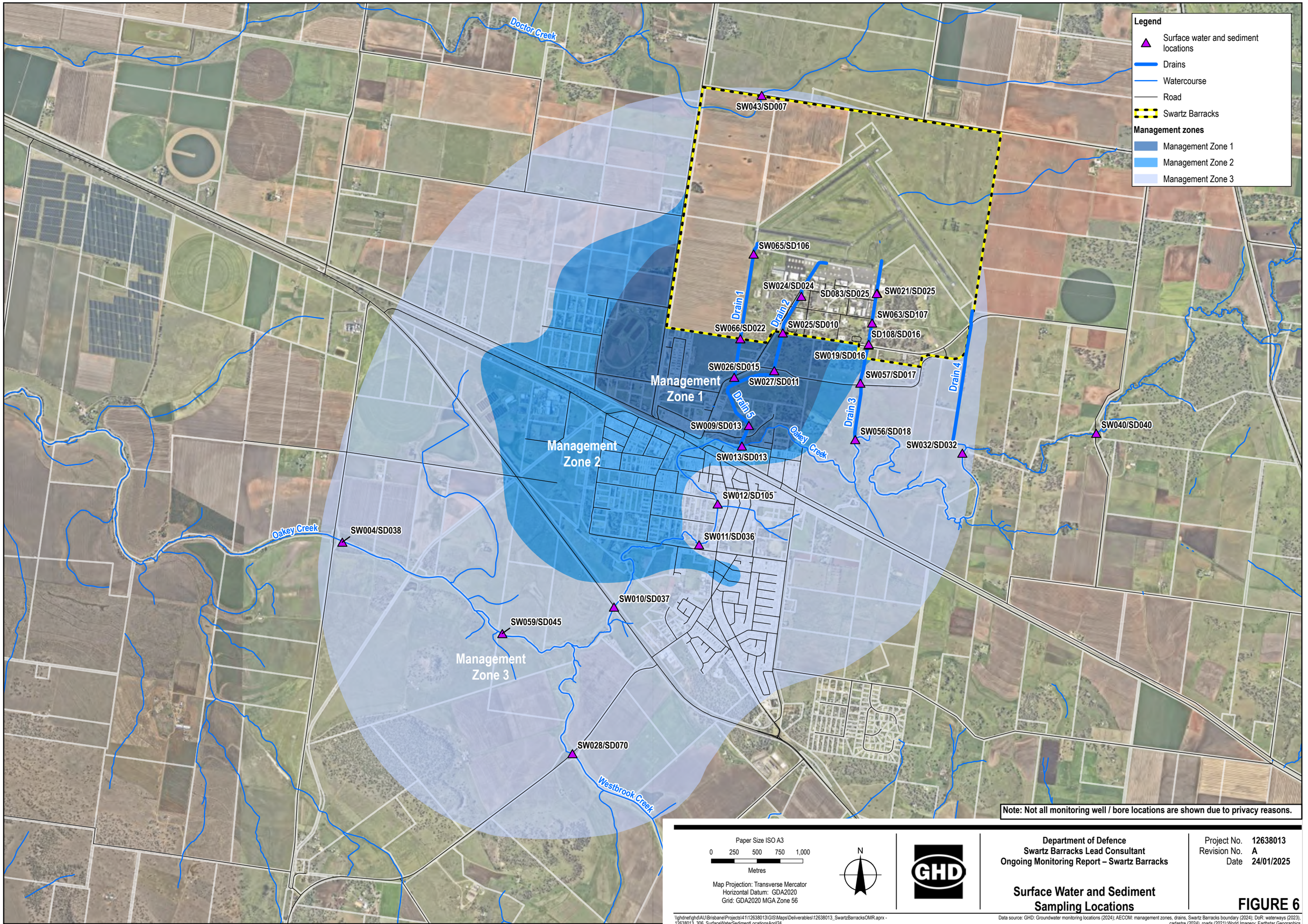
Project No. 12638013
Revision No. A
Date 4/03/2025

Off-Base Groundwater Monitoring Locations

FIGURE 5

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_305_OffBaseGWmonitoringLocations
Print date: 04 Mar 2025 - 15:24

Data source: GHD: Groundwater monitoring locations (2024); AECOM: management zones, drainage channels, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics nearmap.com; . Created by [redacted]



Note: Not all monitoring well / bore locations are shown due to privacy reasons.

Paper Size ISO A3

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Metres

Map Projection: Transverse Mercator
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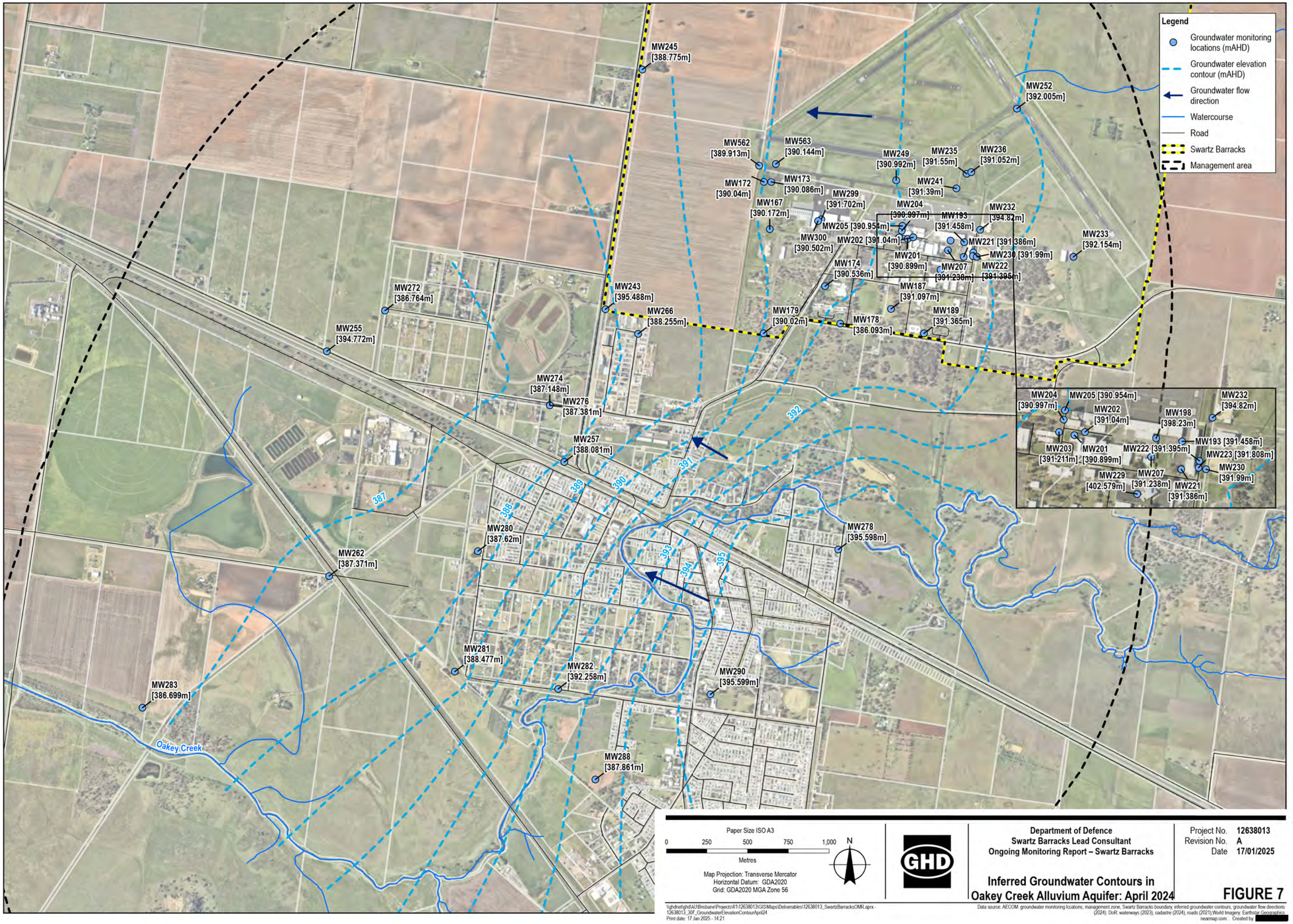
Surface Water and Sediment Sampling Locations

Project No. **12638013**
Revision No. **A**
Date **24/01/2025**

FIGURE 6

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_306_SurfaceWaterSedimentLocationsApril24
Print date: 24 Jan 2025 - 12:23

Data source: GHD: Groundwater monitoring locations (2024); AECOM: management zones, drains, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics
nearmap.com: . Created by: [redacted]



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Map Projection: Transverse Mercator
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Ongoing Monitoring Report – Swartz Barracks

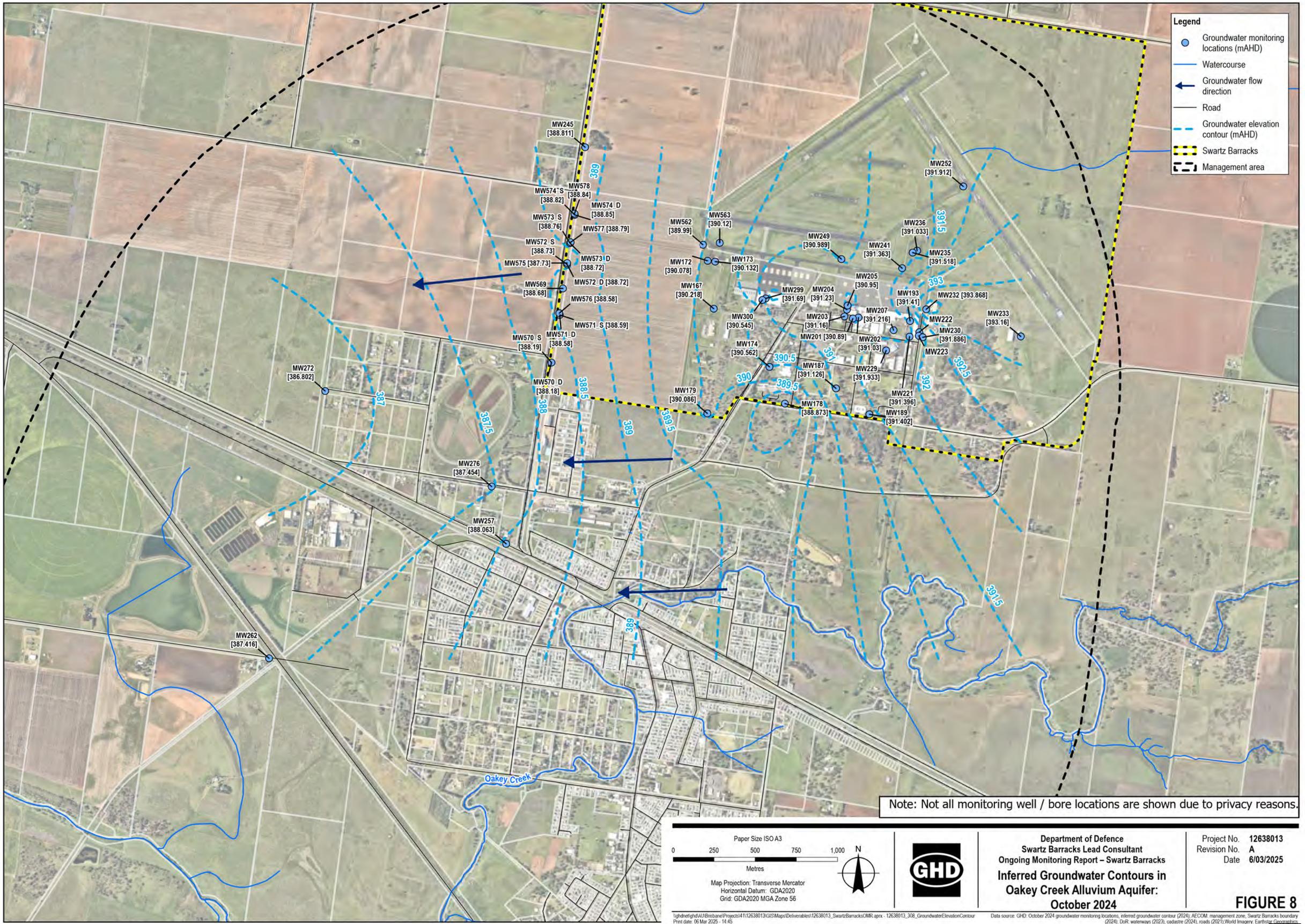
Inferred Groundwater Contours in Oakey Creek Alluvium Aquifer: April 2024

Project No. **12638013**
Revision No. **A**
Date **17/01/2025**

FIGURE 7

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_30F_GroundwaterElevationContourApril24
Print date: 17 Jan 2025 - 14:21

Data source: AECOM: groundwater monitoring locations, management zone, Swartz Barracks boundary, inferred groundwater contours, groundwater flow directions (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics
nearmap.com: . Created by: [redacted]


Legend
Groundwater monitoring locations (mAHD)
Watercourse
Groundwater flow direction
Road
Groundwater elevation contour (mAHD)
Swartz Barracks
Management area
MW245 [388.811]
MW578 [388.84]
MW574 S [388.82]
MW574 D [388.85]
MW573 S [388.76]
MW577 [388.79]
MW572 S [388.73]
MW575 [387.73]
MW573 D [388.72]
MW569 [388.68]
MW572 D [388.72]
MW576 [388.58]
MW571 S [388.59]
MW571 D [388.58]
MW570 S [388.19]
MW570 D [388.18]
MW272 [386.802]
MW276 [387.454]
MW257 [388.063]
MW262 [387.416]
MW562 [389.99]
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MW252 [391.912]
MW249 [390.989]
MW241 [391.363]
MW236 [391.033]
MW235 [391.518]
MW172 [390.078]
MW173 [390.132]
MW167 [390.218]
MW205 [390.95]
MW299 [391.69]
MW204 [391.23]
MW193 [391.41]
MW232 [393.868]
MW300 [390.545]
MW203 [391.16]
MW207 [391.216]
MW233 [393.16]
MW201 [390.89]
MW222
MW230 [391.886]
MW202 [391.03]
MW174 [390.562]
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MW187 [391.126]
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MW179 [390.086]
MW221 [391.396]
MW178 [388.873]
MW189 [391.402]
388
388.5
389
389.5
390
390.5
391
391.5
392
392.5
393
Oakey Creek
Note: Not all monitoring well / bore locations are shown due to privacy reasons.
Paper Size ISO A3
0 250 500 750 1,000
Metres
N
Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56
GHD
Department of Defence
Swartz Barracks Lead Consultant
Ongoing Monitoring Report – Swartz Barracks
Inferred Groundwater Contours in Oakey Creek Alluvium Aquifer: October 2024
Project No. 12638013
Revision No. A
Date 6/03/2025
FIGURE 8
\\ghdnetghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_308_GroundwaterElevationContour
Print date: 06 Mar 2025 - 14:45
Data source: GHD: October 2024 groundwater monitoring locations, inferred groundwater contour (2024); AECOM: management zone, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery. Earthstar Geographics, nearmap.com; . Created by: [redacted]

Wilthorn Kelvinhaugh Road
Doctor Creek
Oakey - Cooyar Road
Devon Park Boundary Road
Showgrounds Road
Janetzki Road
Blake Road
Oakey Kelvinhaugh Road
Woods Road
Swartz Road
Corfe Road
Orr Road
North of Source Areas
West of Source Areas
South of Source Areas
East of Source areas
Former Fire Training Ground
Hot Refuel Area and AFFF Settling Tank
Former Fuel Compound and Hot Refuel Area
AFFF Storage and Decanting Area
Current Fire Training Area
AFFF Settling Tank (C59)
Former Fire Station and Foam Training Area
AFFF Settling Tank and AFFF Storage Tank
MW245
MW205
MW187
MW204
MW203
MW201
MW202
MW252
MW198
MW193
MW207
MW236
MW249
MW241
MW235
MW562
MW563
MW172
SD106
SW065
MW173
MW299
MW300
MW232
MW233
SD024
MW221
MW167
SW024
MW174
SD107
SD083/SD025
MW222
MW230
MW223
SD018
MW189
MW178
SD108/SD016
SD016
SD022
MW179
SW066
SW025

	Apr-24	
	PHFxS+PFOS	PFOA
First time detection	None	None
New Maximum	MW562, SW066, SD107, SD108, SD083	MW173, SW066
New Minimum	MW167, MW187, MW205, MW233, MW235, MW245	MW173, MW205, MW222, MW241, MW562, SW065, SD108

Legend

Groundwater analytical results
- PFAS not detected
- Below drinking water guidelines
- Below recreational water guidelines
- Exeeds drinking and recreational water guidelines

Surface water analytical results
- PFAS not detected
- Below drinking water guidelines
- Below recreational water guidelines

Sediment analytical results
- PFAS detected
- PFAS not detected

Aquifer
- Oakey Creek Alluvium

Primary PFAS source areas
1. Former fire training ground (Remediation complete)
2. Former fire station and foam training area
3. Former fuel compound and hot refuel area
4. Aqueous film forming foam (AFFF) storage and decanting area
5. Hot refuel area and AFFF settling tank
6. AFFF settling tank
7. AFFF settling tank and AFFF storage tank
8. Current fire training area

Secondary PFAS source areas
- 1 Drain 1
- 2 Drain 2
- 3 Drain 3
- 4 Drain 4
- 5 Drain 5

- Open drains
- Watercourse
- Road
- Drains
- Swartz Barracks
- Updated Investigation Areas

Paper Size ISO A3
0 100 200 300 400
Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
Ongoing Monitoring Report – Swartz Barracks

On-Base – PFAS in Goundwater, Surface Water and Sediment (April 2024)

Project No. 12638013
Revision No. A
Date 26/06/2025

FIGURE 9

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_309_SwartzBarracksOnsitePFAS
Print date: 26 Jun 2025 - 09:32

Data source: ESDAT: aquifer, OMP analytical results (2024); AECOM: Swartz Barracks boundary, PFAS source areas, open drains (2024); DoR: waterways (2023), roads (2021);World Imagery: Earthstar Geographics nearmap.com: , Created by [redacted]

	Apr-24	
	PHFxS+PFOS	**PFOA**
First time detection	SD032	MW132
New Maximum	MW132, SD025	MW132, MW294, SW057, SD017
New Minimum	MW056, MW113, MW122, MW157, MW276, MW280, MW281, MW291, SW059, SW027, SW099, SW056, SD015, SD025, SD130	MW157, MW276, MW281

SD025 SW043 MW265 Doctor Creek SD007 MW113 MW151 MW272 MW273 MW021 MW273 MW272 MW243 MW266 SW066 SD010/SD130 SW025 SW026 SW027 SW057 SD015 SD011 SD017 SW040 SD038 SD040 Old Warrego Highway MW255 MW276 MW147 MW275 MW274 MW275 MW257 SD013 SW009 SW056 SW032 SD032 SD102 SW013 MW278 MW280 SW012 MW262 SD105 SW011 MW003 MW281 MW282 MW056 MW038 SW004/SD038 SD037 MW283 Oakey Creek MW288 SW010 SD036 SD045 SW059/SD045 Warrego Highway MW285 SW028 SD070 Westbrook Creek

Legend

Surface water analytical results
- PFAS not detected
- Below drinking water guidelines
- Below recreational water guidelines

Sediment analytical results
- PFAS detected
- PFAS not detected

Groundwater analytical results
- PFAS not detected
- Below drinking water guidelines
- Below recreational water guidelines
- PFAS exceeds drinking and recreational water guidelines

Legend
- Oakey Creek Alluvium
- Deeper aquifers

Primary PFAS source areas
1. Former fire training ground (Remediation complete)
2. Former fire station and foam training area
3. Former fuel compound and hot refuel area
4. Aqueous film forming foam (AFFF) storage and decanting area
5. Hot refuel area and AFFF settling tank
6. AFFF settling tank
7. AFFF settling tank and AFFF storage tank
8. Current fire training area

Secondary PFAS source areas
- 1 Drain 1
- 2 Drain 2
- 3 Drain 3
- 4 Drain 4
- 5 Drain 5
- 6 Cooby creek
- 7 Oakey creek downstream
- 8 Oakey creek upstream
- 9 Westbrook creek
- A Farm dam
- B Former non-defence fire training area
- C Former trade waste system
- D Former landfill
- Watercourse
- Road
- Open drains
- Drains
- Swartz Barracks

Doctor Creek Oakey Creek

Paper Size ISO A3

0 250 500 750 1,000

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
Ongoing Monitoring Report – Swartz Barracks

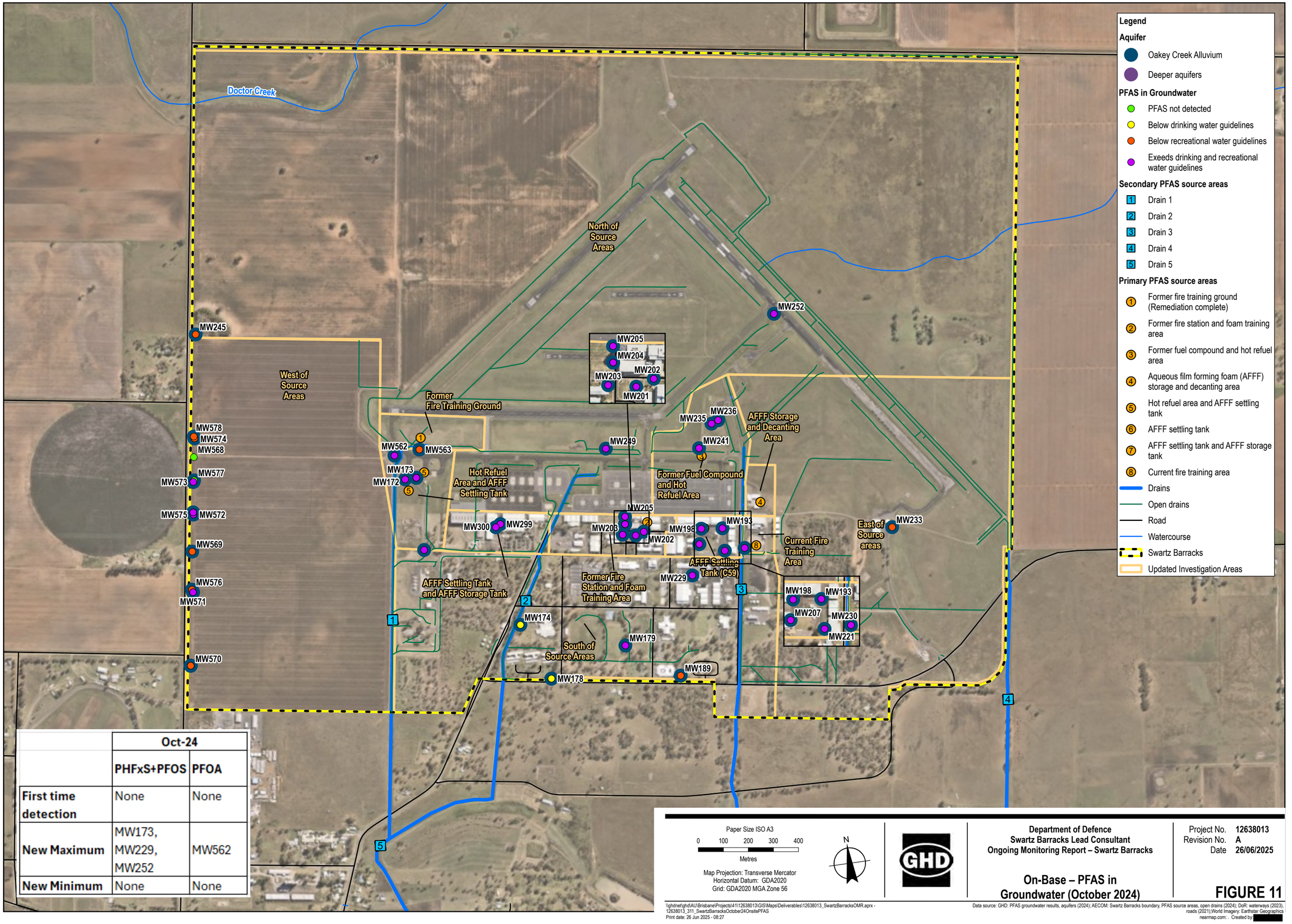
Off-Base – PFAS in Groundwater, Surface Water and Sediment (April 2024)

Project No. **12638013**
Revision No. **A**
Date **26/06/2025**

FIGURE 10

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_310_SwartzBarracksOffsitePFAS
Print date: 26 Jun 2025 - 08:24

Data source: GHD: aquifer type, updated investigation areas (2024); ESDAT: OMP Analytical results (2024); AECOM: Swartz Barracks boundary, open drains, PFAS source areas (2024) ; DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics
nearmap.com: . Created by: [redacted]



	Oct-24	
	PHFxS+PFOS	PFOA
First time detection	None	None
New Maximum	MW173, MW229, MW252	MW562
New Minimum	None	None

Paper Size ISO A3

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
Ongoing Monitoring Report – Swartz Barracks

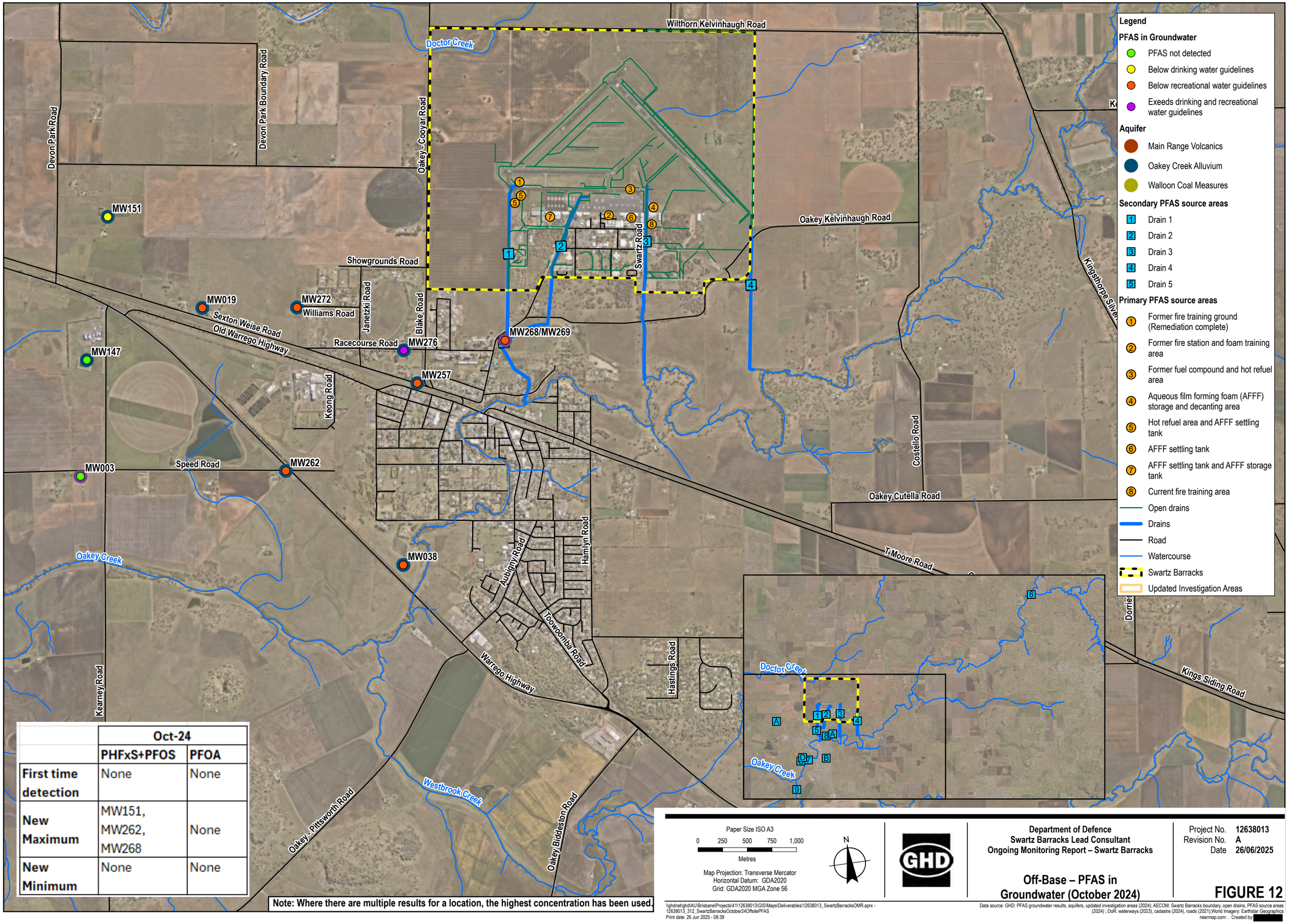
On-Base – PFAS in Groundwater (October 2024)

Project No. 12638013
Revision No. A
Date 26/06/2025

FIGURE 11

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_311_SwartzBarracksOctober24OnsitePFAS
Print date: 26 Jun 2025 - 08:27

Data source: GHD: PFAS groundwater results, aquifers (2024); AECOM: Swartz Barracks boundary, PFAS source areas, open drains (2024); DoR: waterways (2023), roads (2021);World Imagery: Earthstar Geographics nearmap.com: , Created by [redacted]



	Oct-24	
	PHFxS+PFOS	PFOA
First time detection	None	None
New Maximum	MW151, MW262, MW268	None
New Minimum	None	None

Note: Where there are multiple results for a location, the highest concentration has been used.

Paper Size ISO A3

0 250 500 750 1,000

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
Ongoing Monitoring Report – Swartz Barracks

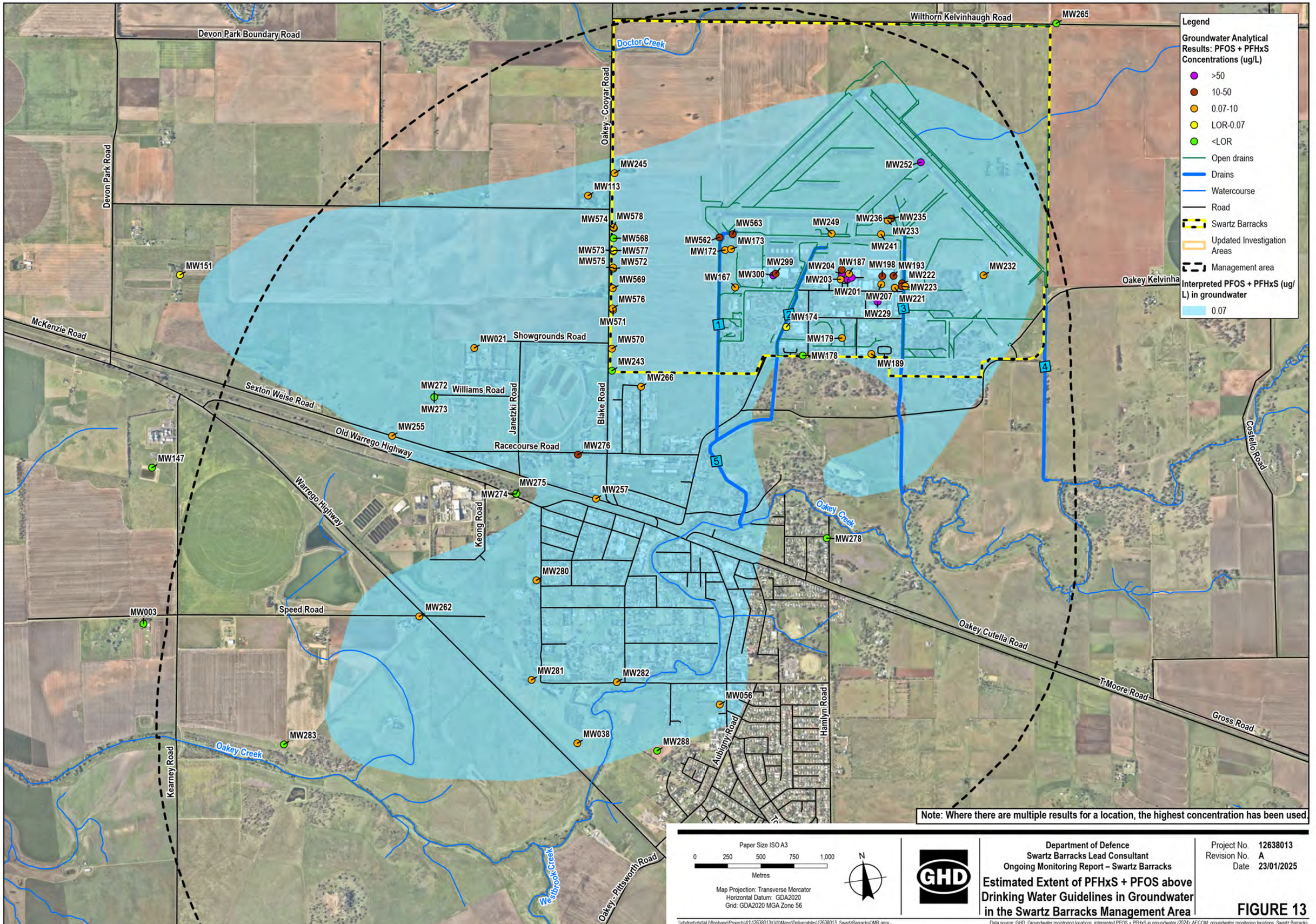
Off-Base – PFAS in Groundwater (October 2024)

Project No. 12638013
Revision No. A
Date 26/06/2025

FIGURE 12

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_312_SwartzBarracksOctober24OffsitePFAS
Print date: 26 Jun 2025 - 08:39

Data source: GHD: PFAS groundwater results, aquifers, updated investigation areas (2024); AECOM: Swartz Barracks boundary, open drains, PFAS source areas (2024) ; DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics nearmap.com: , Created by [redacted]



Paper Size ISO A3

0 250 500 750 1,000

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
Ongoing Monitoring Report – Swartz Barracks

Estimated Extent of PFHxS + PFOS above Drinking Water Guidelines in Groundwater in the Swartz Barracks Management Area

Project No. **12638013**
Revision No. **A**
Date **23/01/2025**

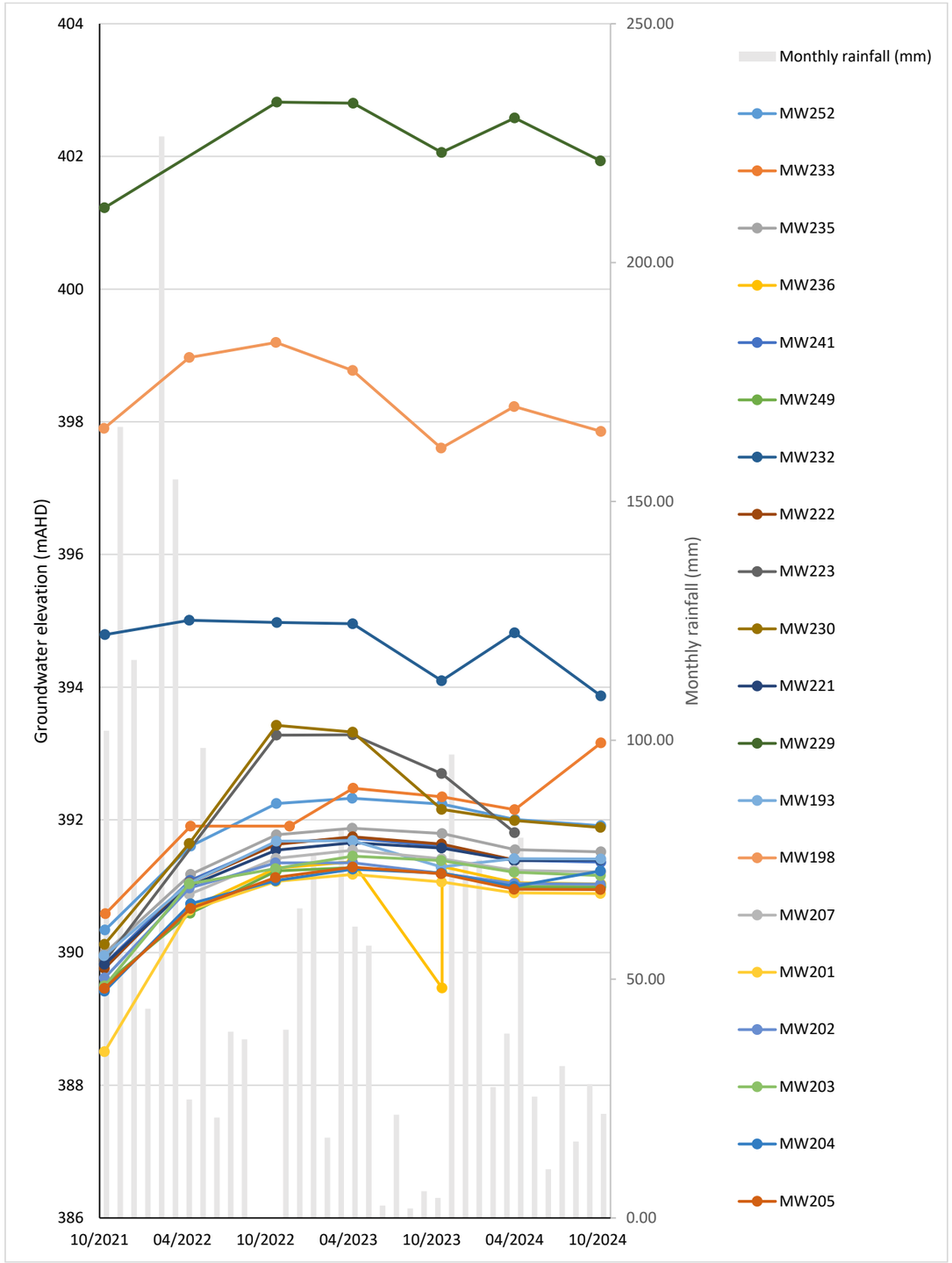
FIGURE 13

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMR.aprx - 12638013_313_EstimatedExtentOfPFHxSandPFOS
Print date: 23 Jan 2025 - 08:31

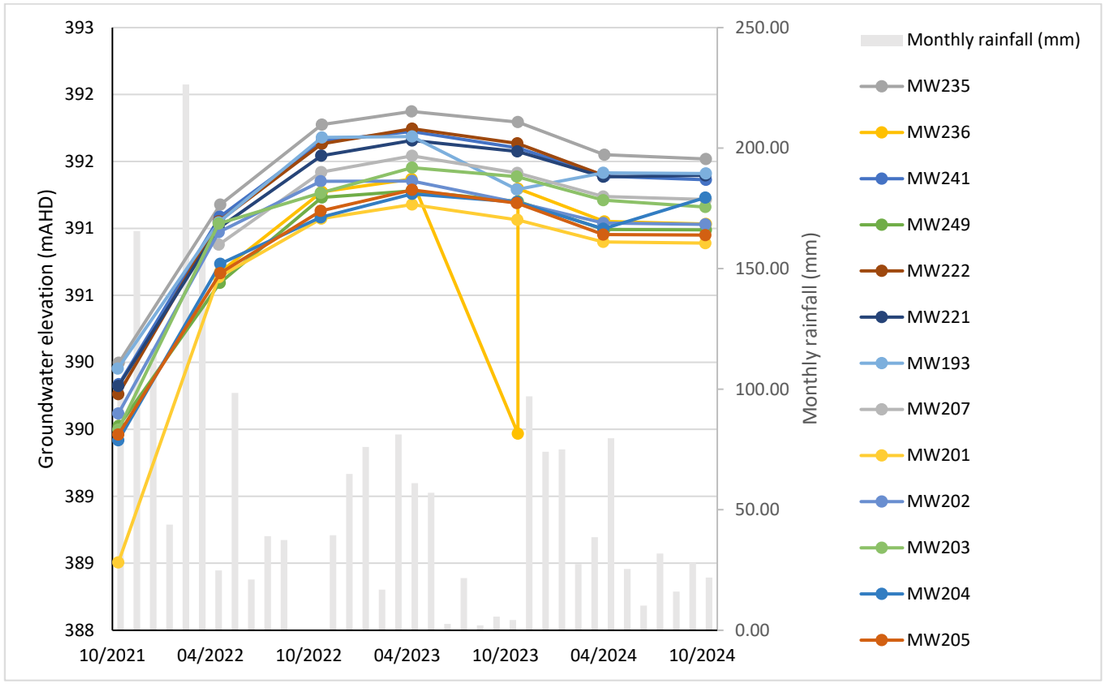
Data source: GHD: Groundwater monitoring locations, interpreted PFOS + PFHxS in groundwater (2024), AECOM: groundwater monitoring locations, Swartz Barracks boundary (2024), DoR: waterways (2023), roads (2021)World Imagery. Earthstar Geographics, nearmap.com: . Created by [redacted]

Appendix A - Graph breakdowns

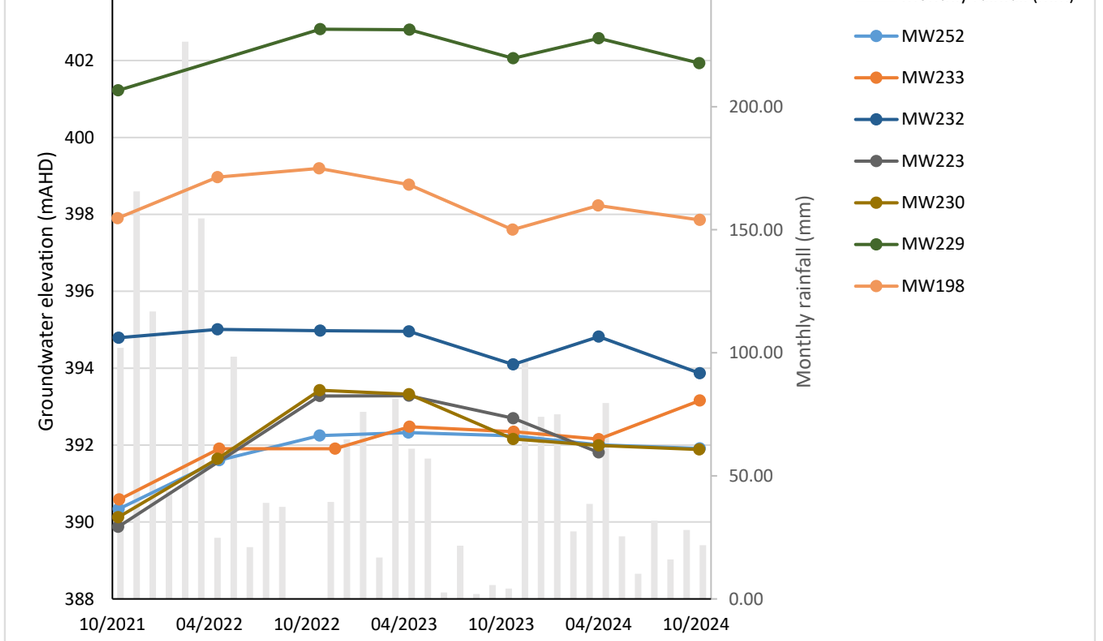
Graph 7-1 Groundwater elevation hydrograph up-gradient on Base wells - OCA



Graph A-1 Groundwater elevation hydrograph for up-gradient on-Base wells in the Oakey Creek Alluvium

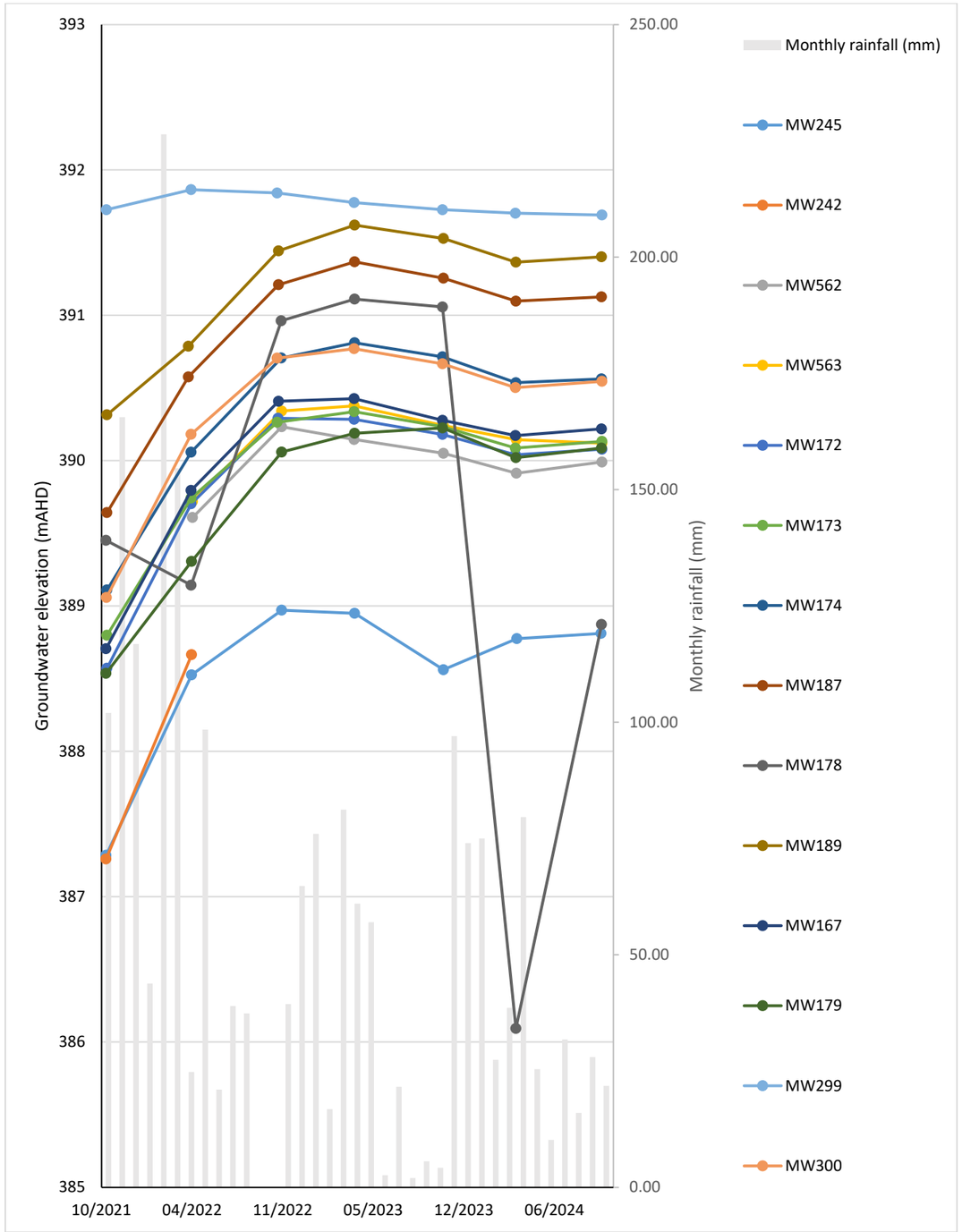


Graph A-2 391.8 Groundwater elevation hydrograph for up-gradient on-Base wells in the Oakey Creek Alluvium with a SWL of 388.5 –

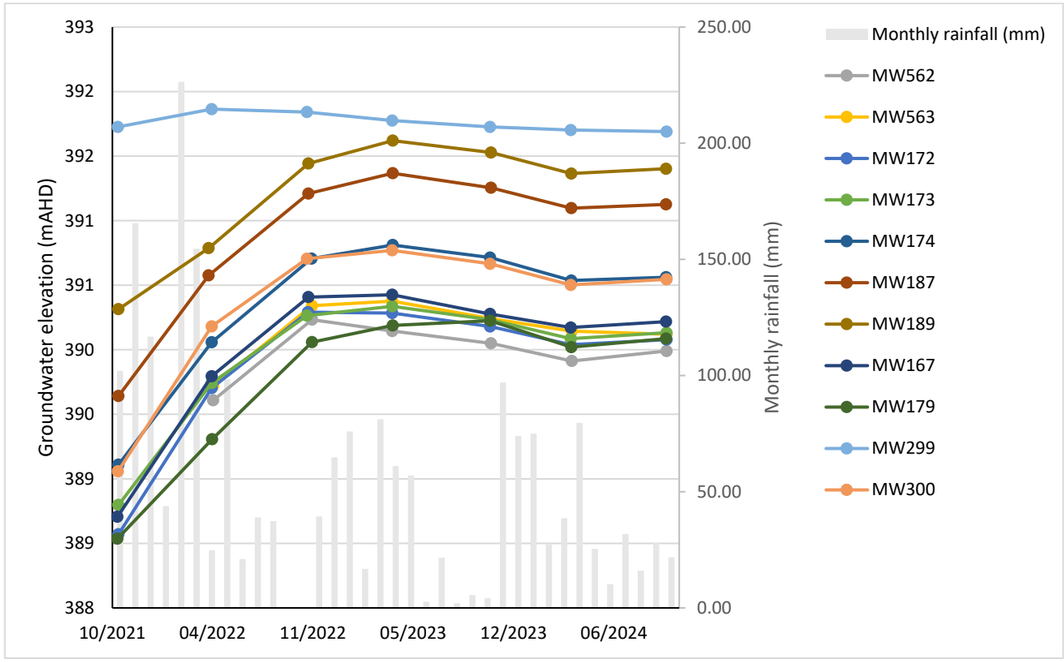


Graph A-3 402.8 Groundwater elevation hydrograph for up-gradient on-Base wells in the Oakey Creek Alluvium with a SWL of 389.9 –

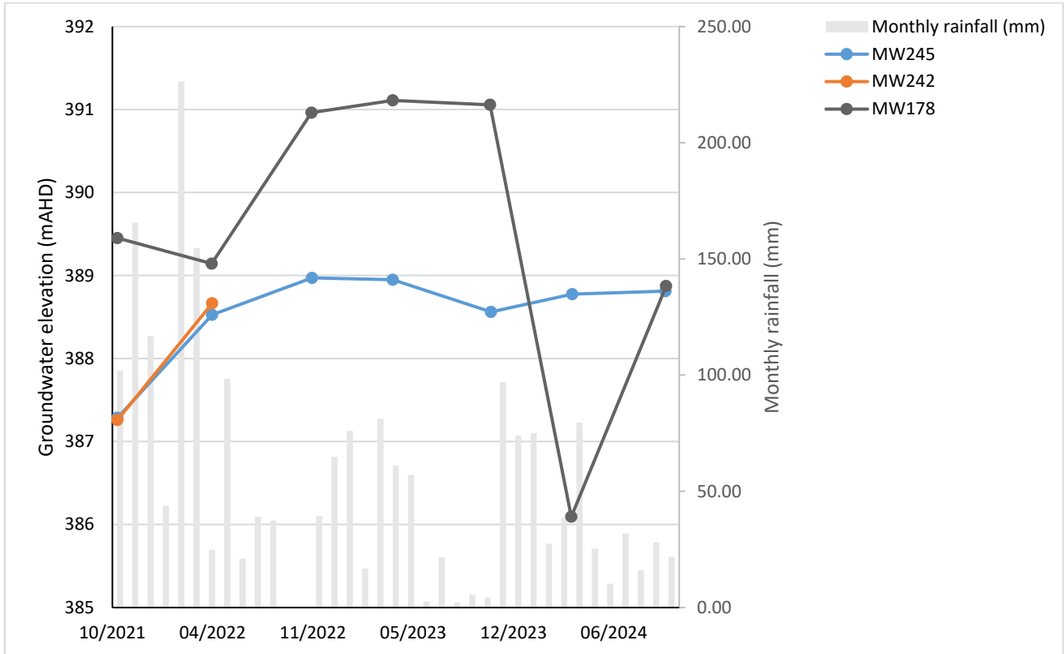
Graph 7-2 Groundwater elevation hydrograph for down-gradient on-Base wells - OCA



Graph A-4 *Groundwater elevation hydrograph for down-gradient on-Base wells in the Oakey Creek Alluvium*

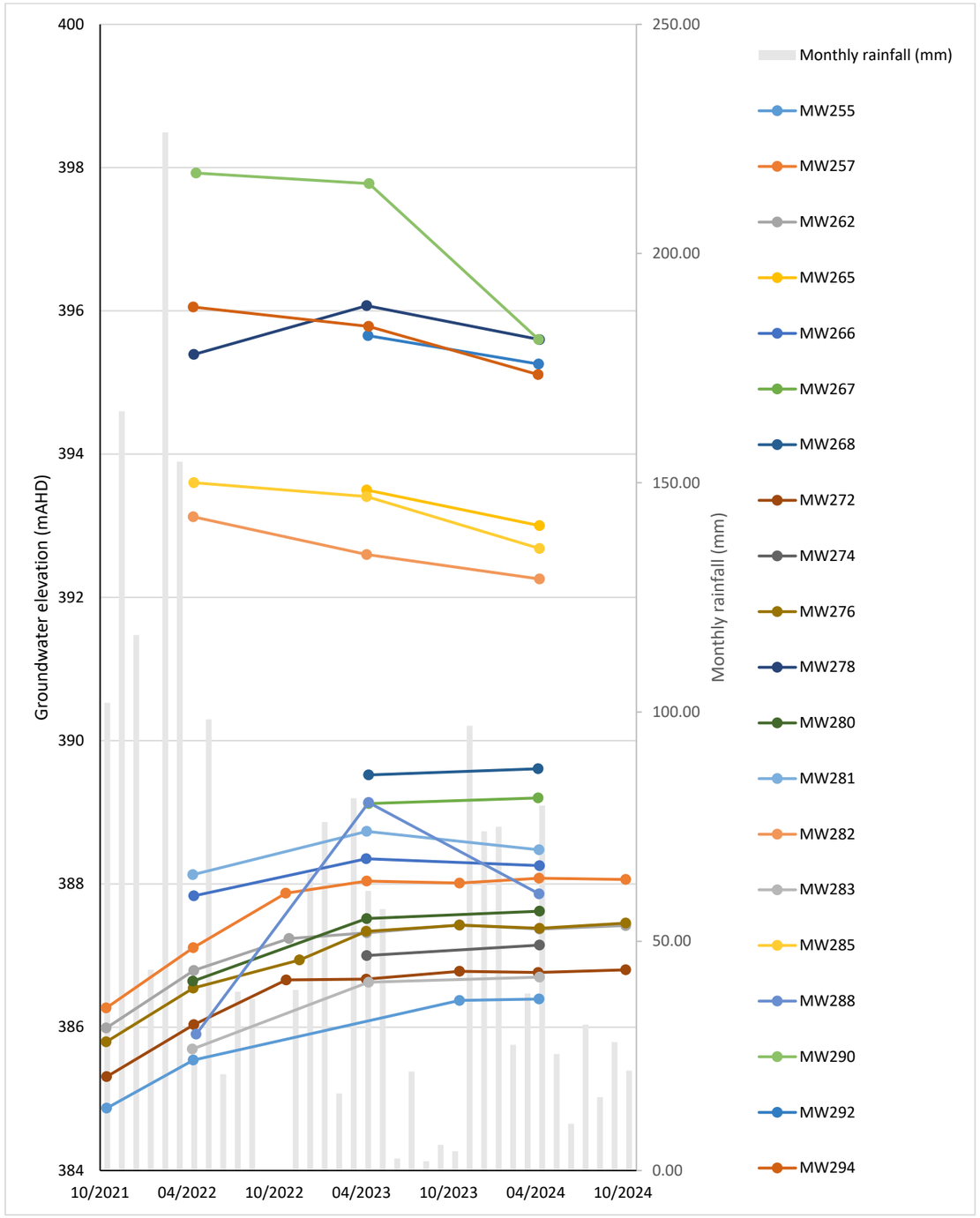


Graph A-5 *Groundwater elevation hydrograph for down-gradient on-Base wells in the Oakey Creek Alluvium*

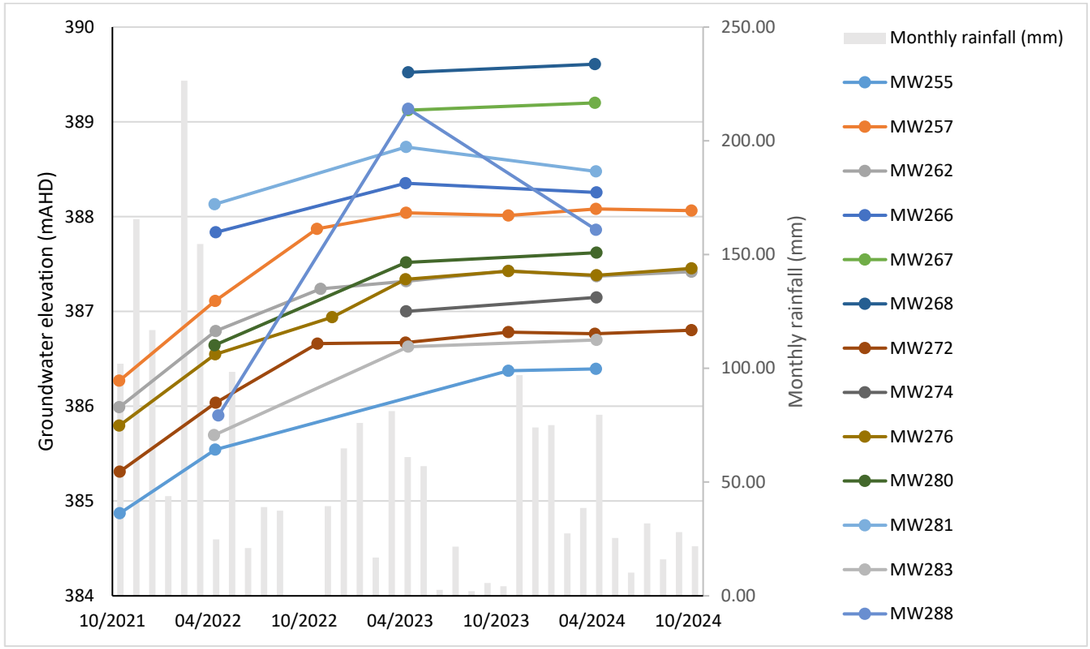


Graph A-6 *Groundwater elevation hydrograph for down-gradient on-Base wells in the Oakey Creek Alluvium*

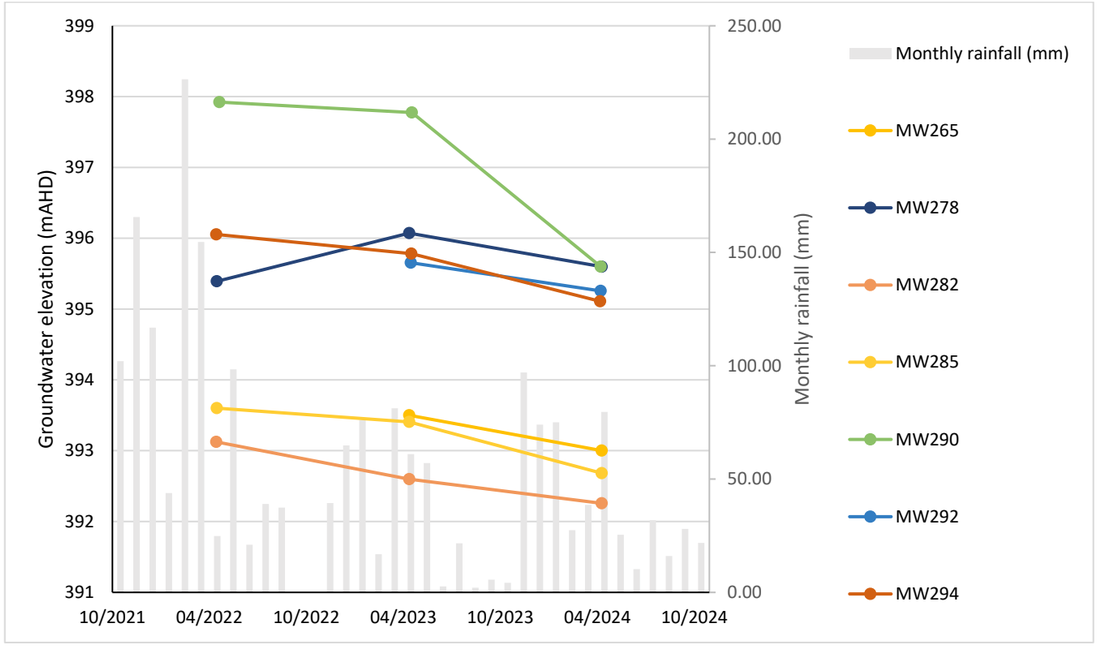
Graph 7-3 Groundwater elevation hydrograph for off-base wells - OCA



Graph A-7 *Groundwater elevation hydrograph for off-Base wells in the Oakey Creek Alluvium*

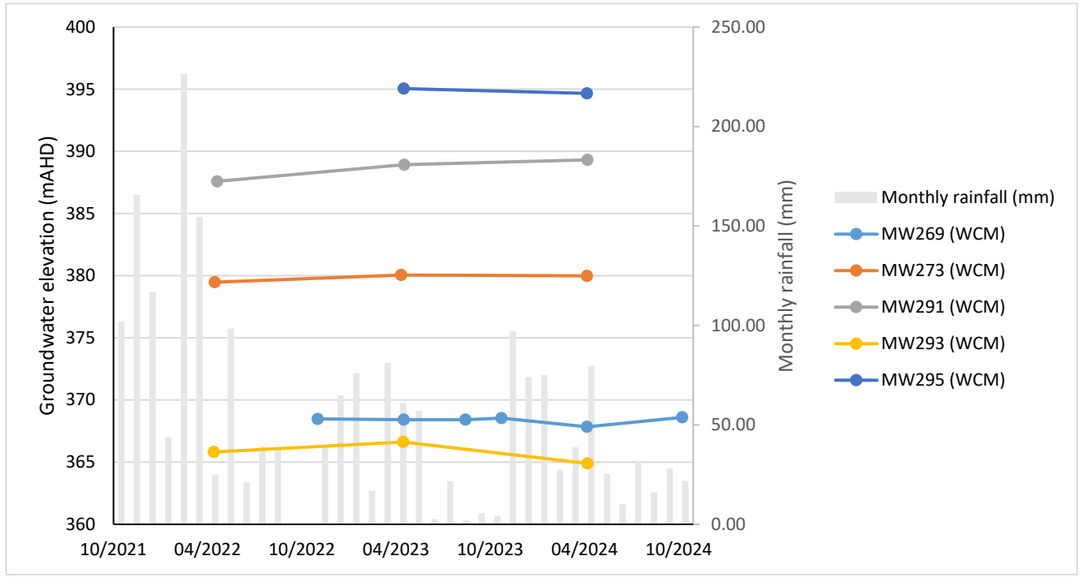


Graph A-8 *Groundwater elevation hydrograph for off-Base wells in the Oakey Creek Alluvium with a SWL of 384.9 – 389.6*

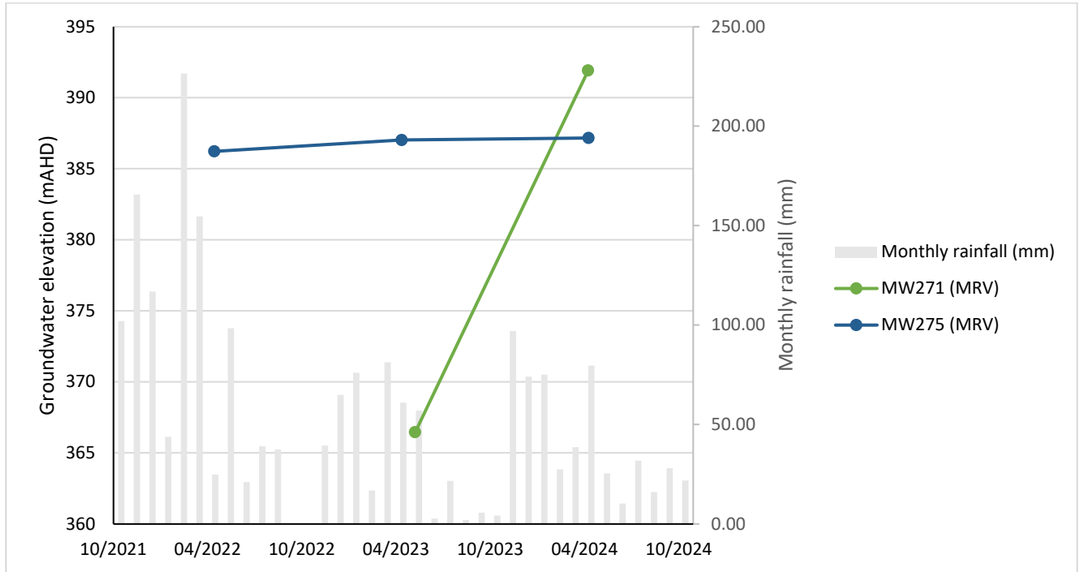


Graph A-9 *Groundwater elevation hydrograph for off-Base wells in the Oakey Creek Alluvium with a SWL of 392.3 – 397.9*

Graph 7-4 Groundwater elevation hydrograph - Deeper aquifers

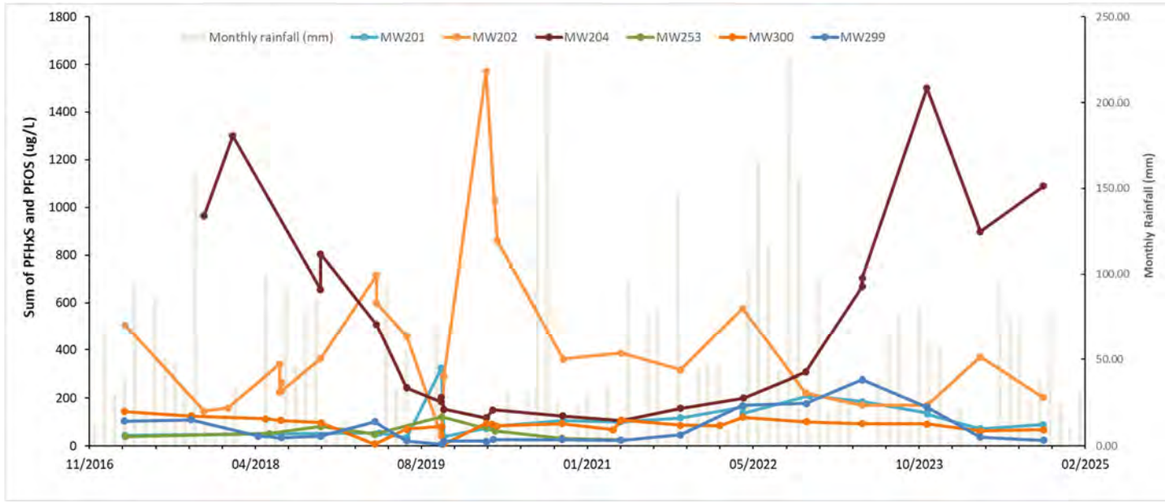


Graph A-10 Groundwater elevation hydrograph for the wells in the WCM aquifers

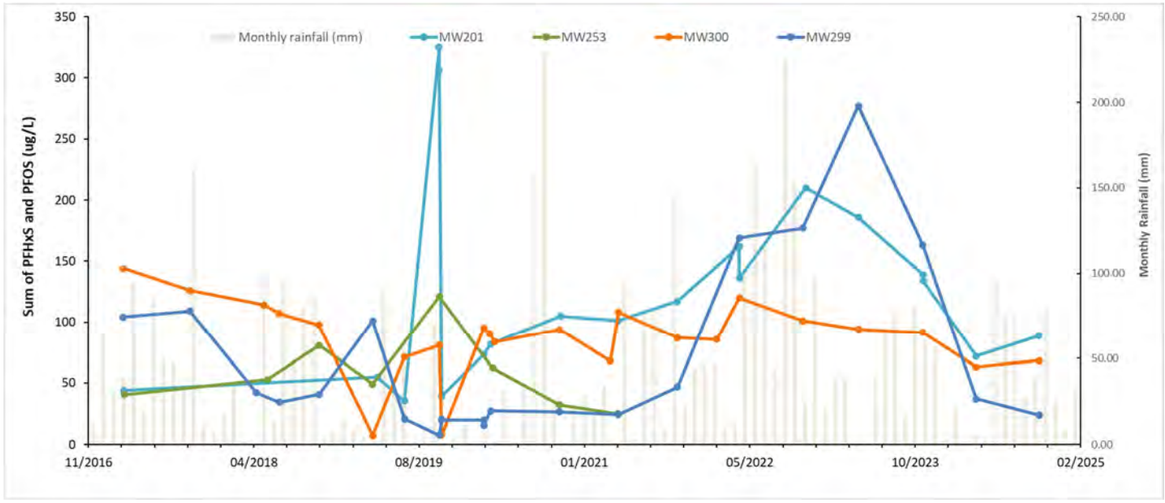


Graph A-11 Groundwater elevation hydrograph for the wells in the MRV aquifers

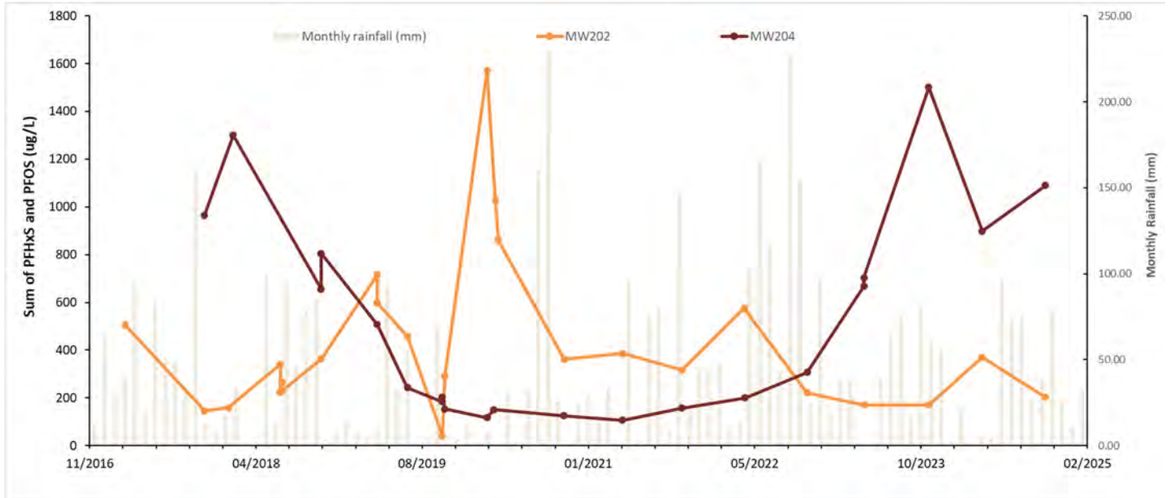
Graph 7-5 Sum of PFHxS and PFOS in groundwater on-Base source area wells (high concentrations) - OCA



Graph A-12 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with high concentrations from 2019-2024 – Oakey Creek Alluvium

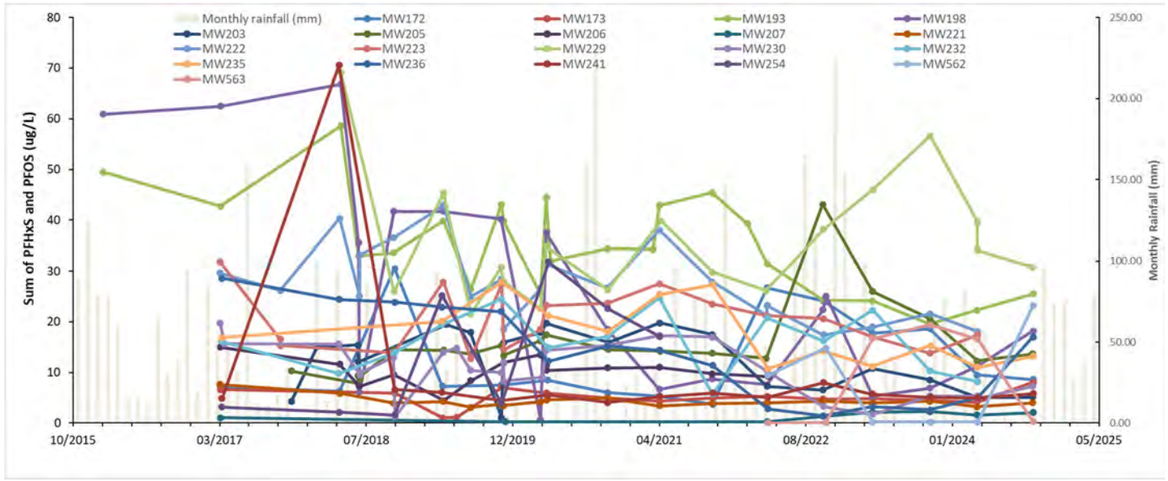


Graph A-14 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with high concentrations from 2019-2024 – Oakey Creek Alluvium

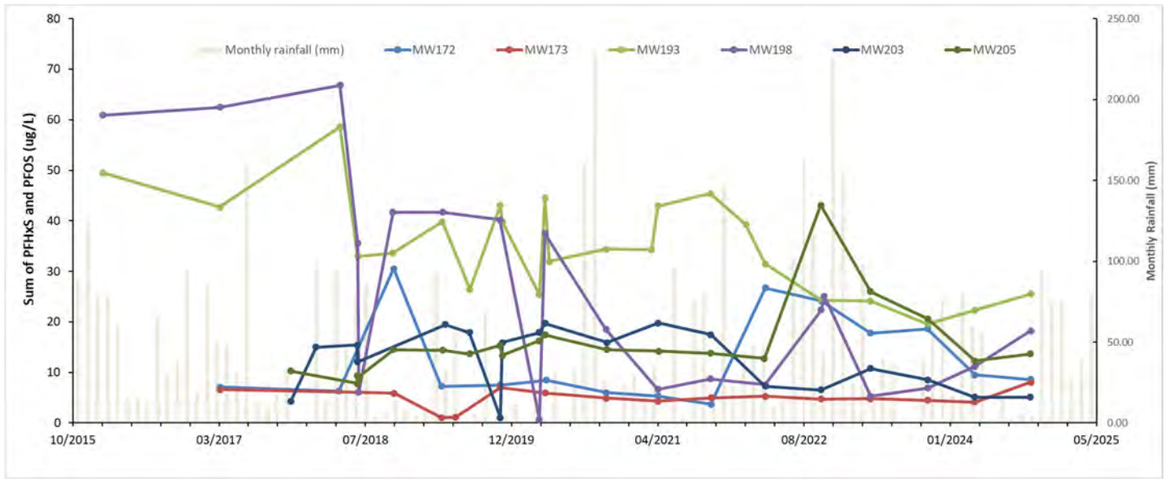


Graph A-13 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with high concentrations from 2019-2024 – Oakey Creek Alluvium

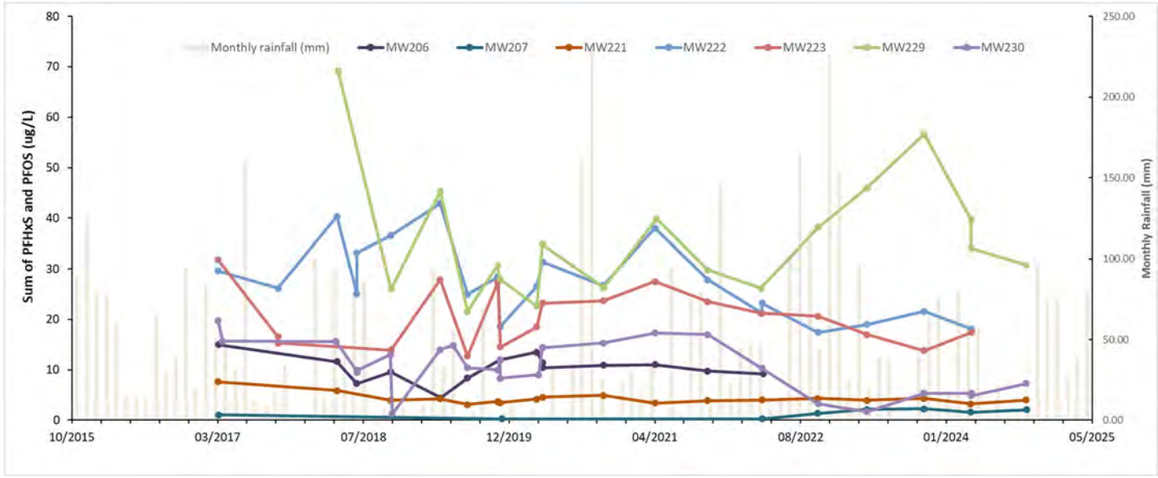
Graph 7-6 Sum of PFHxS and PFOS in groundwater on-Base source area wells (lower concentrations) - OCA



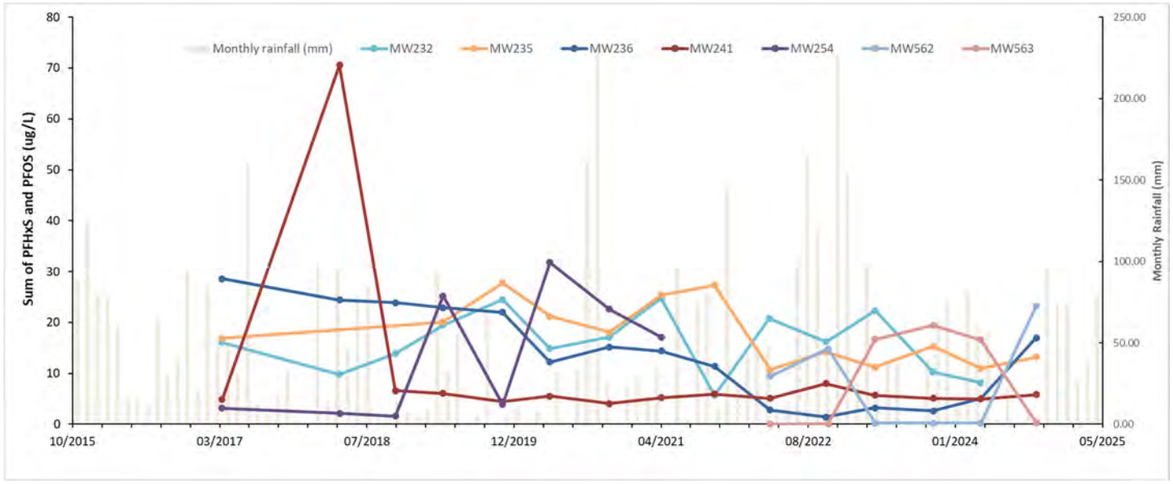
Graph A-15 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with lower concentrations from 2019-2024 – Oakey Creek Alluvium (1)



Graph A-16 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with lower concentrations from 2019-2024 – Oakey Creek Alluvium (2)

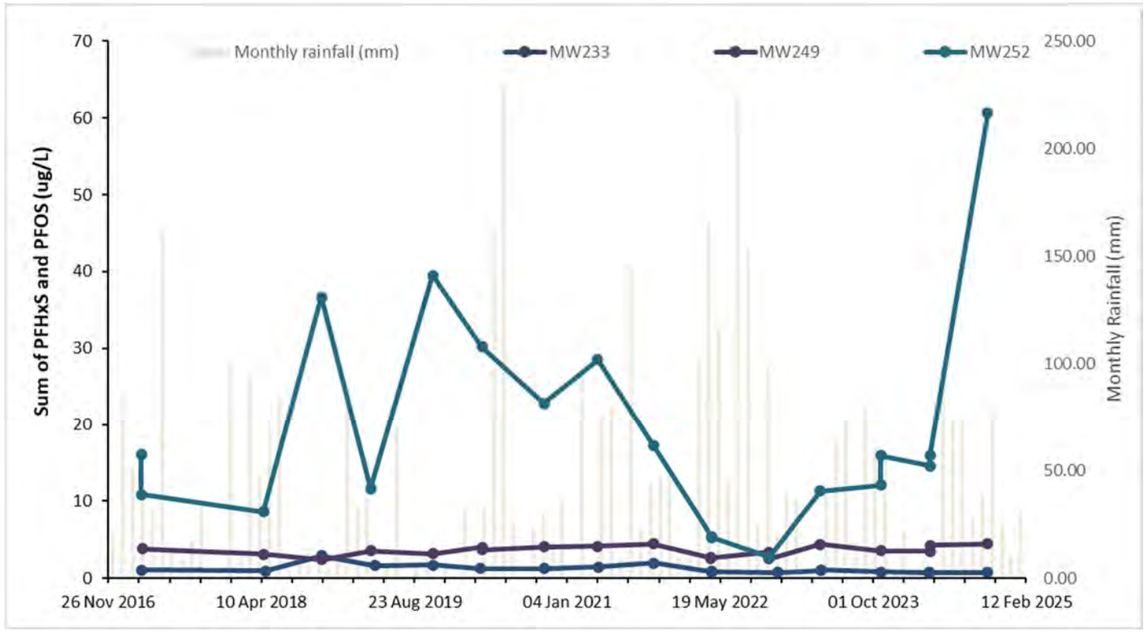


Graph A-17 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with lower concentrations from 2019-2024 – Oakey Creek Alluvium (3)



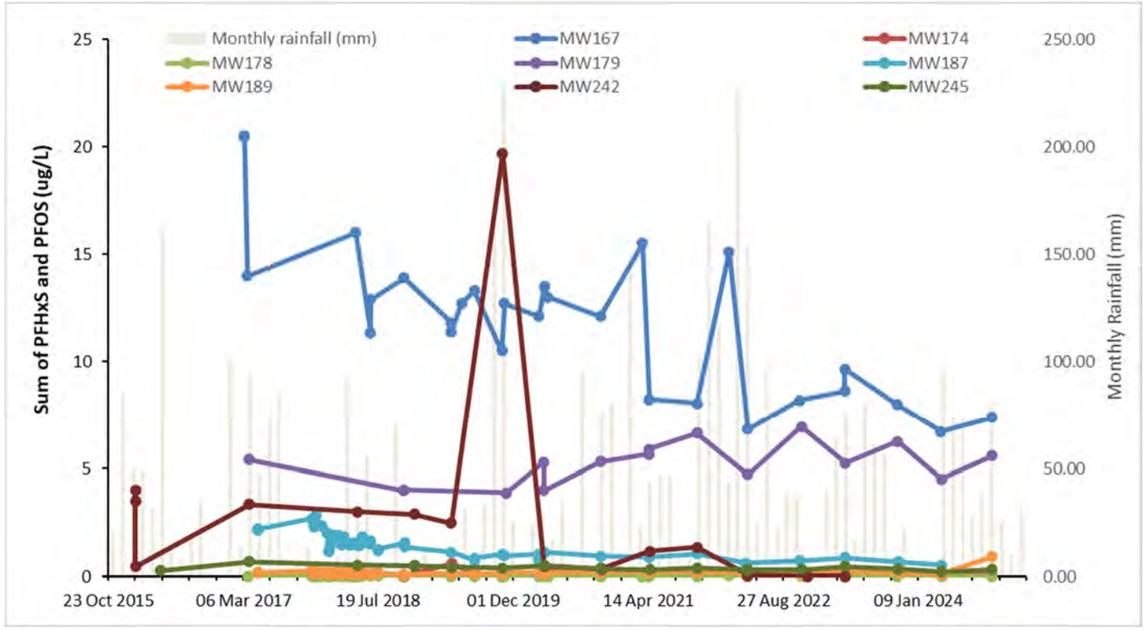
Graph A-18 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base source area wells with lower concentrations from 2019-2024 – Oakey Creek Alluvium (4)

Graph 7-7 Sum of PFHxS and PFOS in groundwater on-Base upgradient boundary wells - OCA



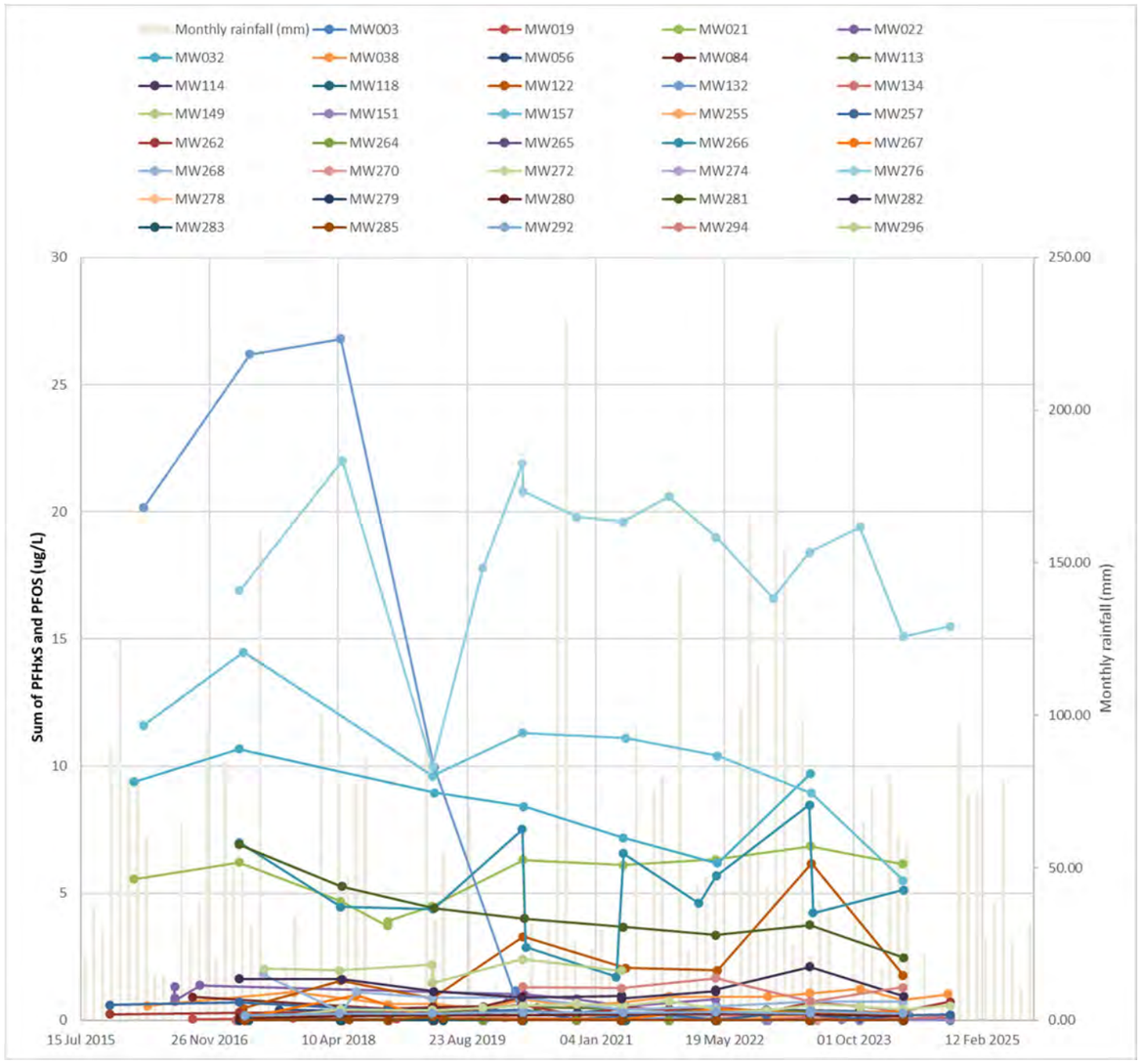
Graph A-19 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base upgradient boundary wells from 2019-2024 – Oakey Creek Alluvium

Graph 7-8 Sum of PFHxS and PFOS in groundwater on-Base downgradient boundary wells - OCA



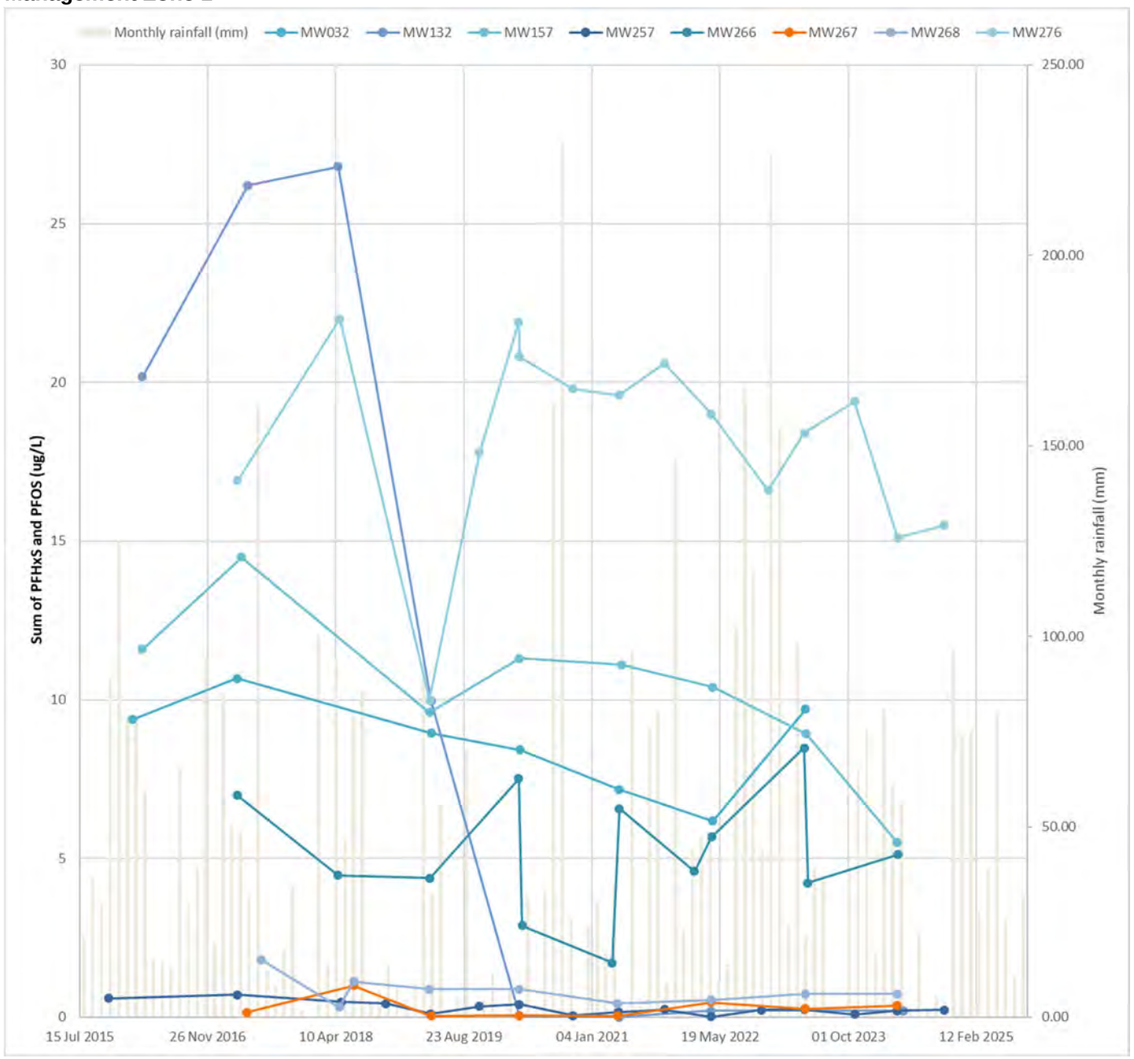
Graph A-20 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for on-Base downgradient boundary wells from 2019-2024 – Oakey Creek Alluvium

Graph 7-9 Sum of PFHxS and PFOS in groundwater off-Base wells - OCA



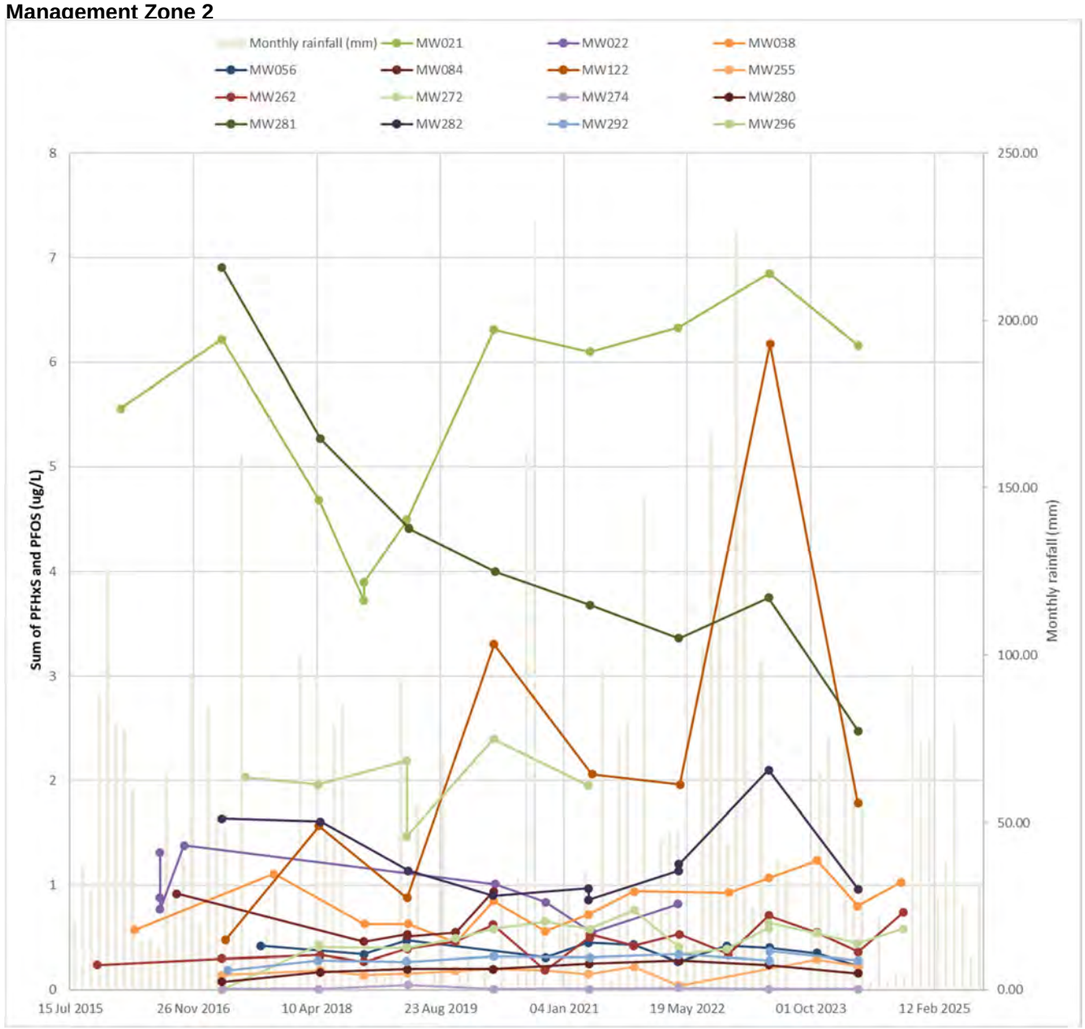
Graph A-21 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base wells from 2015-2024 – Oakey Creek Alluvium

Management Zone 1



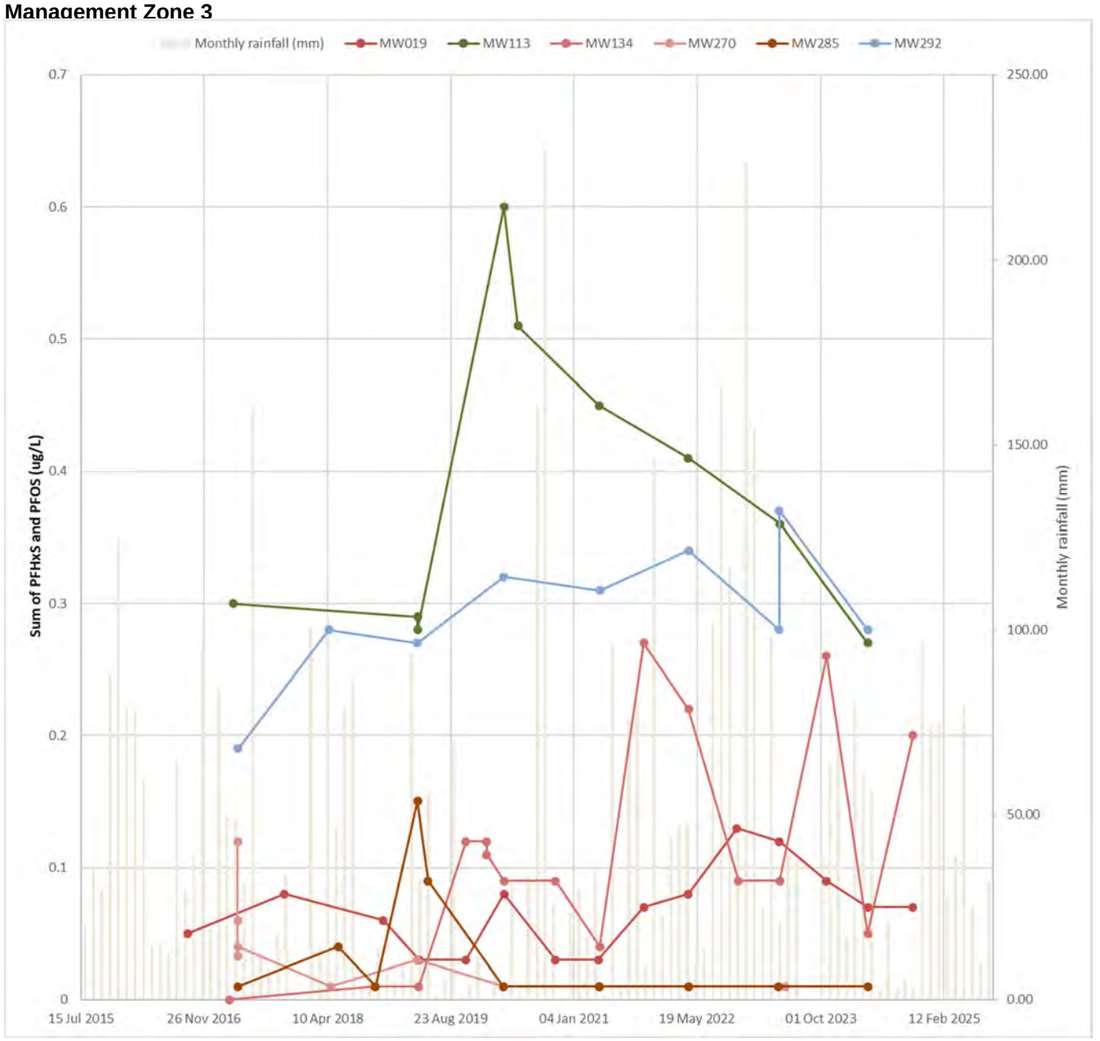
Graph A-22 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base wells in Management Zone 1 from 2015-2024 – Oakey Creek Alluvium

Management Zone 2

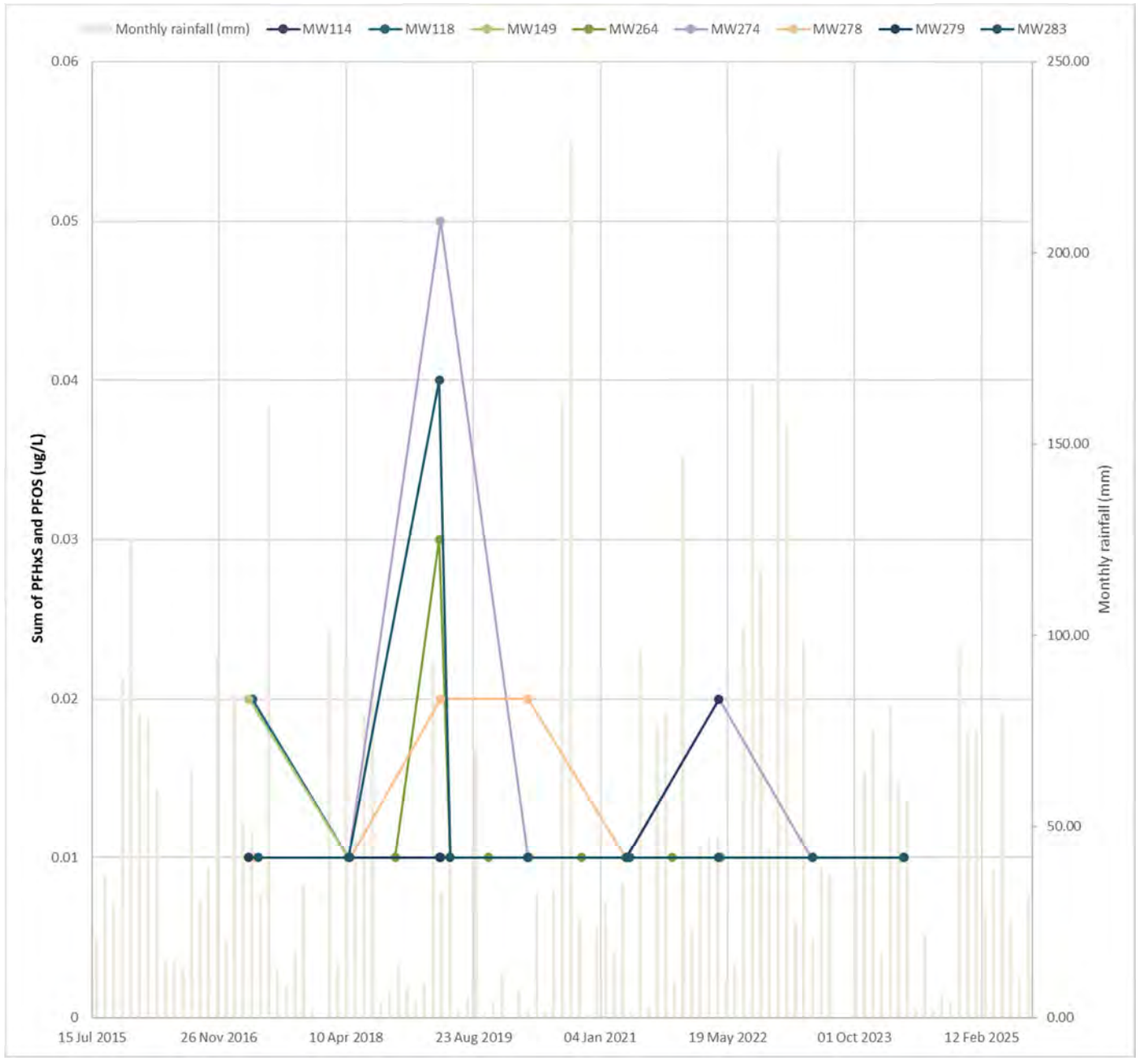


Graph A-23 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base wells in Management Zone 2 from 2015-2024 – Oakey Creek Alluvium

Management Zone 3

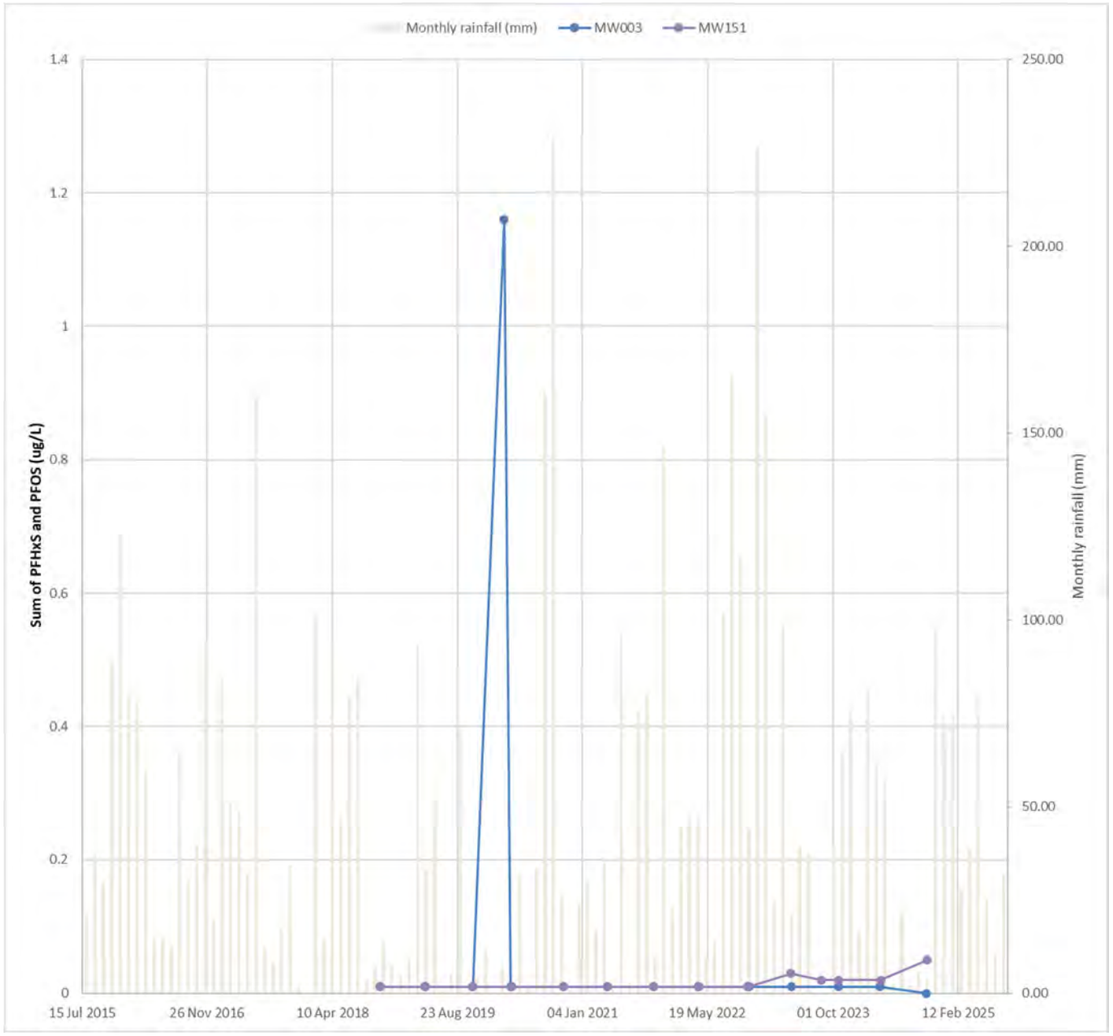


Graph A-24 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base wells in Management Zone 3 with concentrations greater than 0.1 µg/L from 2015-2024 – Oakey Creek Alluvium



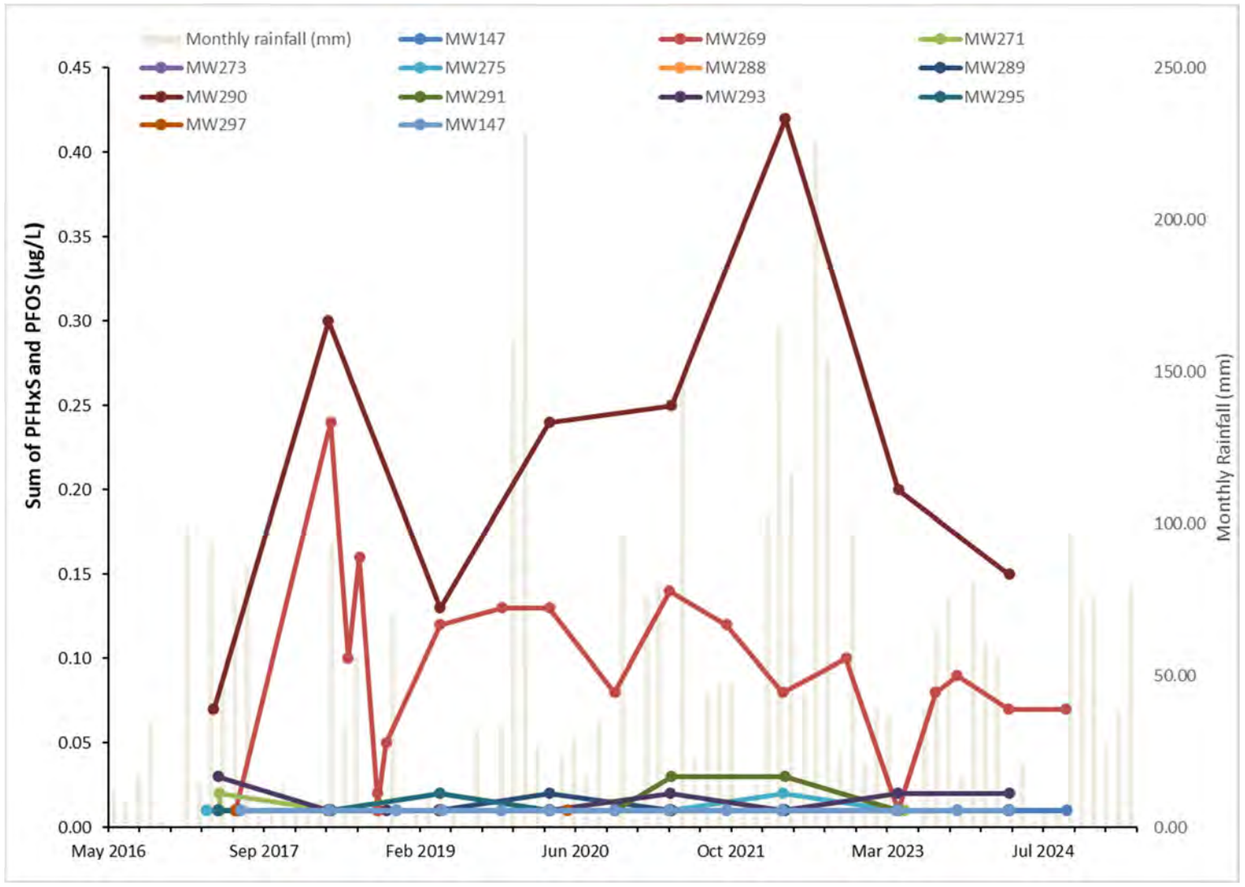
Graph A-25 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base wells in Management Zone 3 with concentrations less than 0.1 µg/L from 2015-2024 – Oakey Creek Alluvium

Off-Base monitoring wells not included in a management zone



Graph A-26 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base wells east of site with no management zone from 2015-2024 – Oakey Creek Alluvium

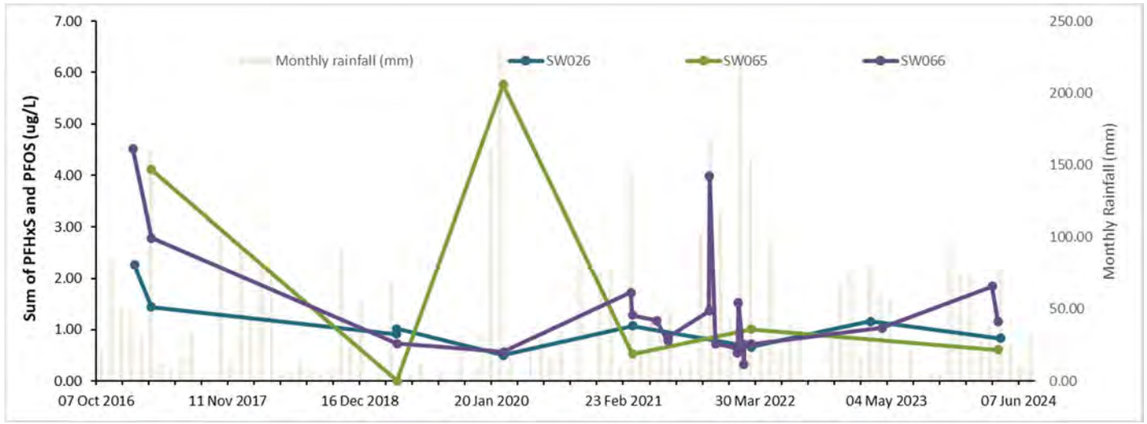
Graph 7-10 Sum of PFHxS and PFOS in groundwater off-Base - Underlying aquifers



Graph A-27 Sum of PFHxS and PFOS in groundwater sampled during OMP monitoring rounds for off-Base Underlying Aquifers from 2019-2024

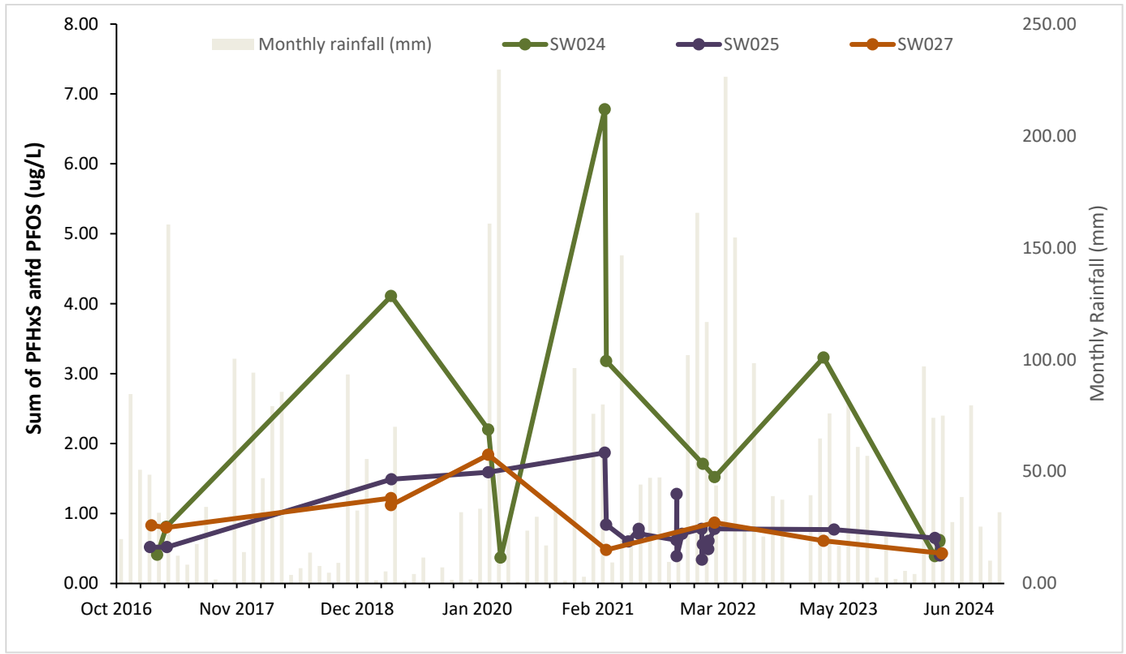
Graph 7-11 Sum of PFHxS and PFOS in Surface Water

Drain 1



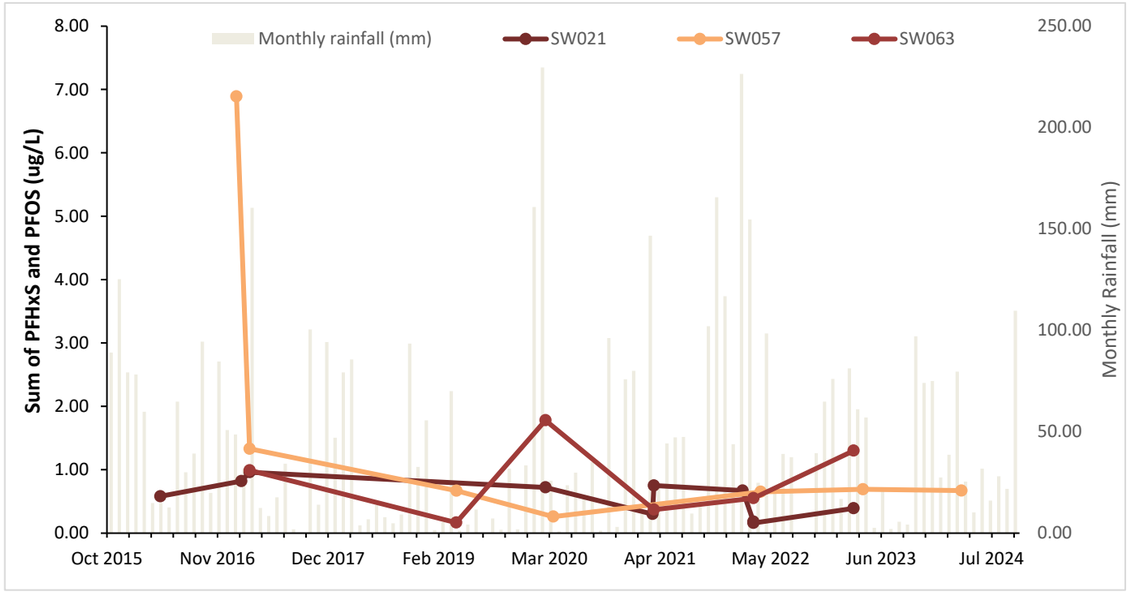
Graph A-28 Sum of PFHxS and PFOS in surface water sampled in Drain 1 during OMP monitoring rounds from 2016-2024

Drain 2



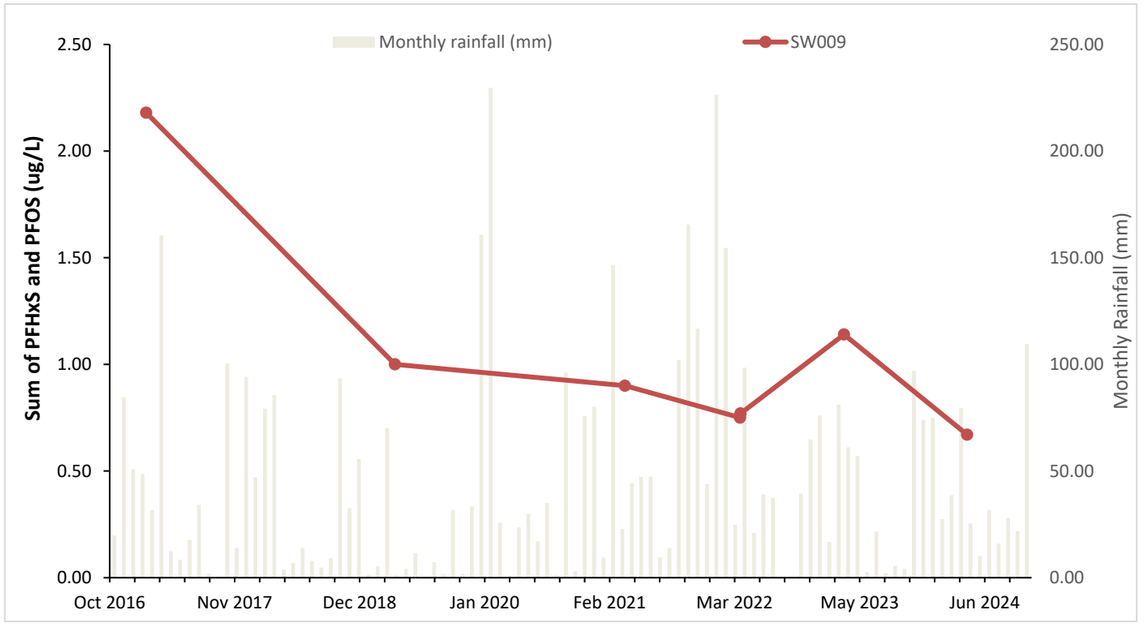
Graph A-29 Sum of PFHxS and PFOS in surface water sampled in Drain 2 during OMP monitoring rounds from 2016-2024

Drain 3



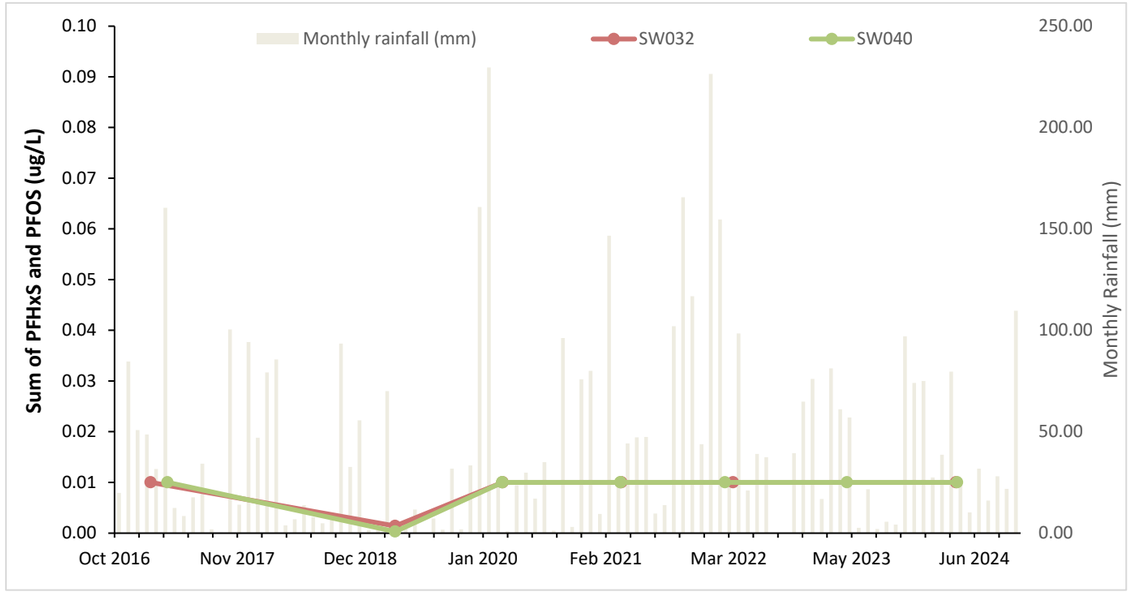
Graph A-30 Sum of PFHxS and PFOS in surface water sampled in Drain 3 during OMP monitoring rounds from 2016-2024

Drain 5



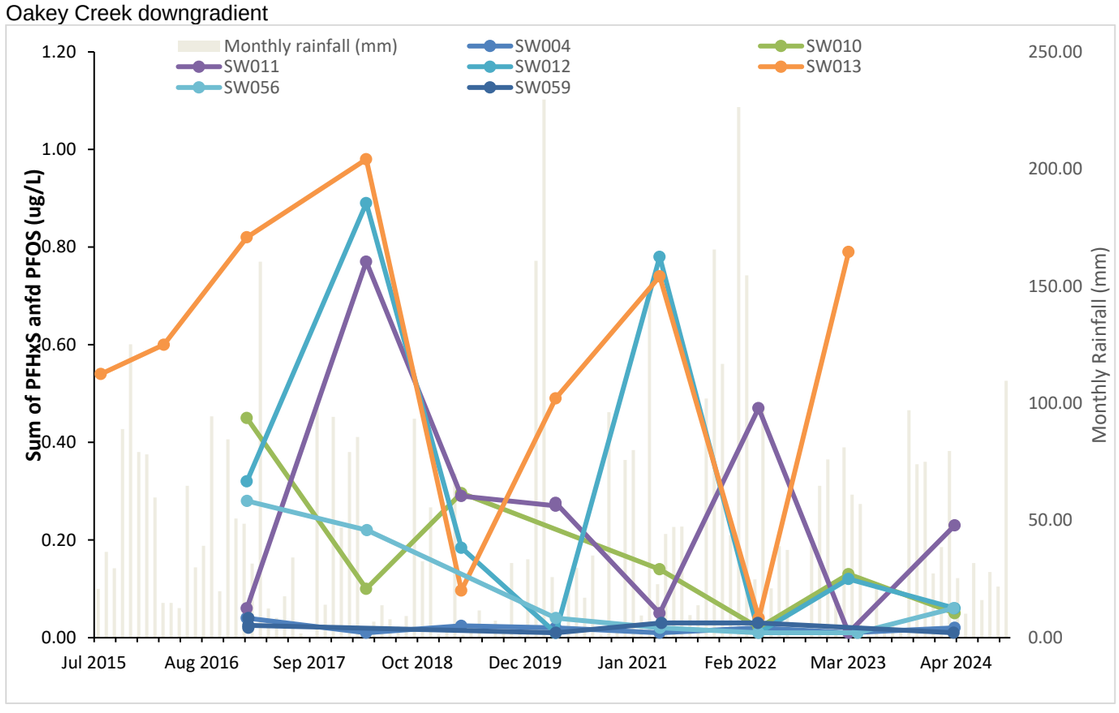
Graph A-31 Sum of PFHxS and PFOS in surface water sampled in Drain 5 during OMP monitoring rounds from 2016-2024

Oakey Creek Upgradient



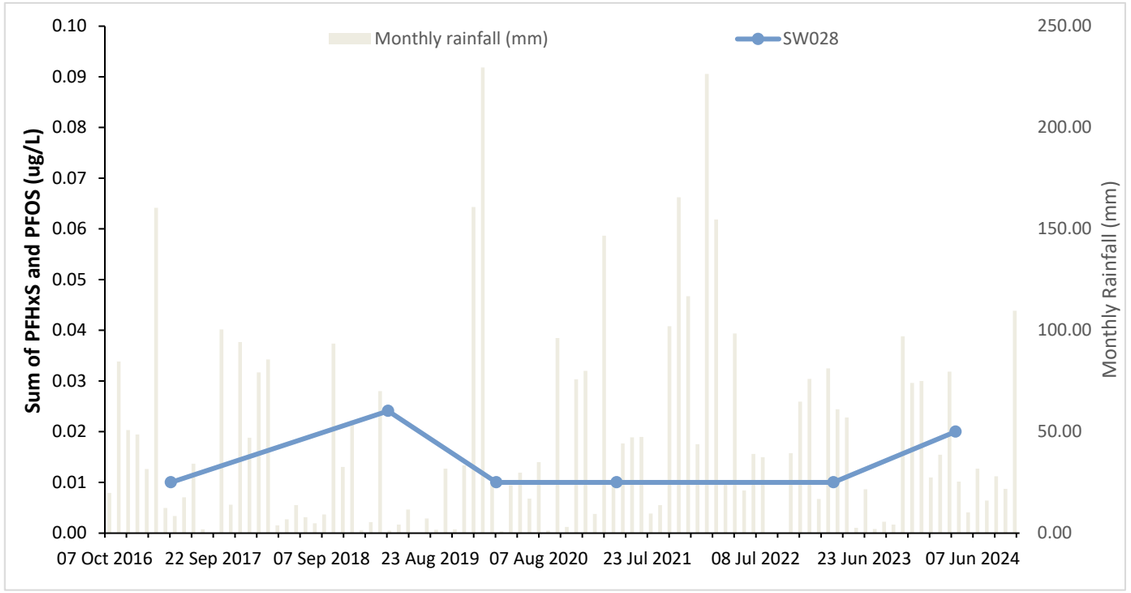
Graph A-32 Sum of PFHxS and PFOS in surface water sampled in Oakey Creek upgradient locations during OMP monitoring rounds from 2016-2024

Oakey Creek downgradient



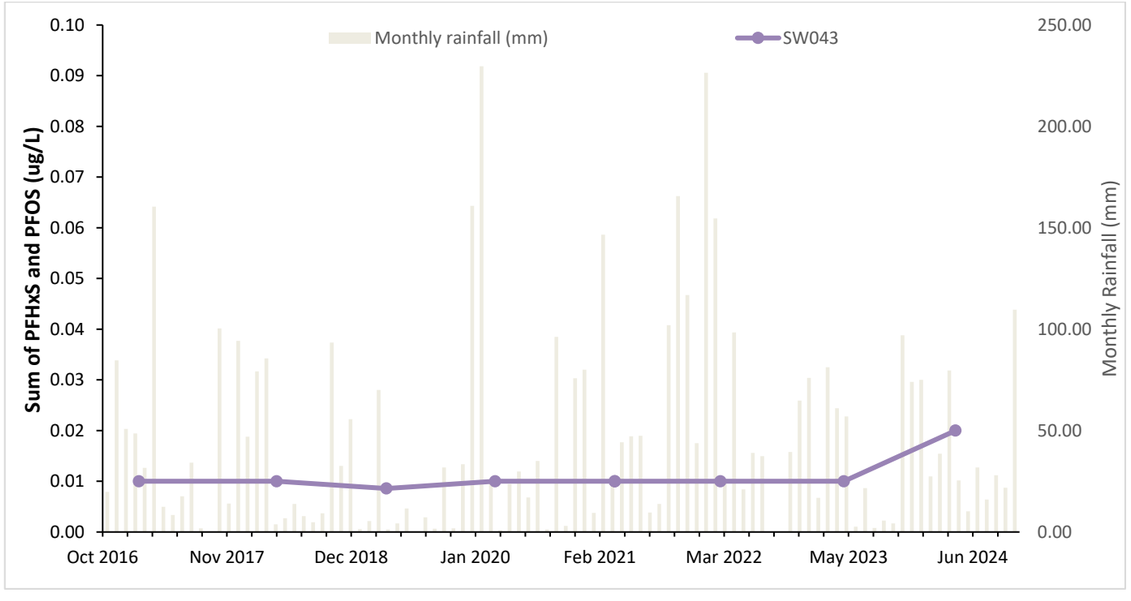
Graph A-33 Sum of PFHxS and PFOS in surface water sampled in Oakey Creek downgradient locations during OMP monitoring rounds from 2015-2024

Westbrook Creek



Graph A-34 Sum of PFHxS and PFOS in surface water sampled in Westbrook Creek locations during OMP monitoring rounds from 2016-2024

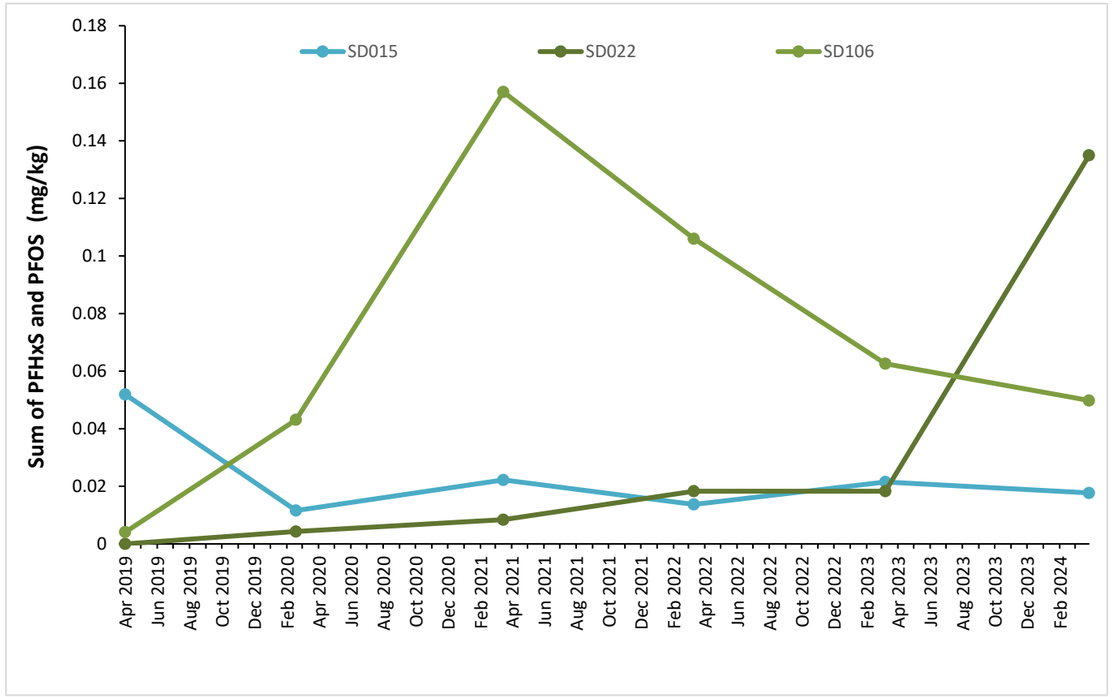
Doctor Creek



Graph A-35 Sum of PFHxS and PFOS in surface water sampled in Westbrook Creek locations during OMP monitoring rounds from 2016-2024

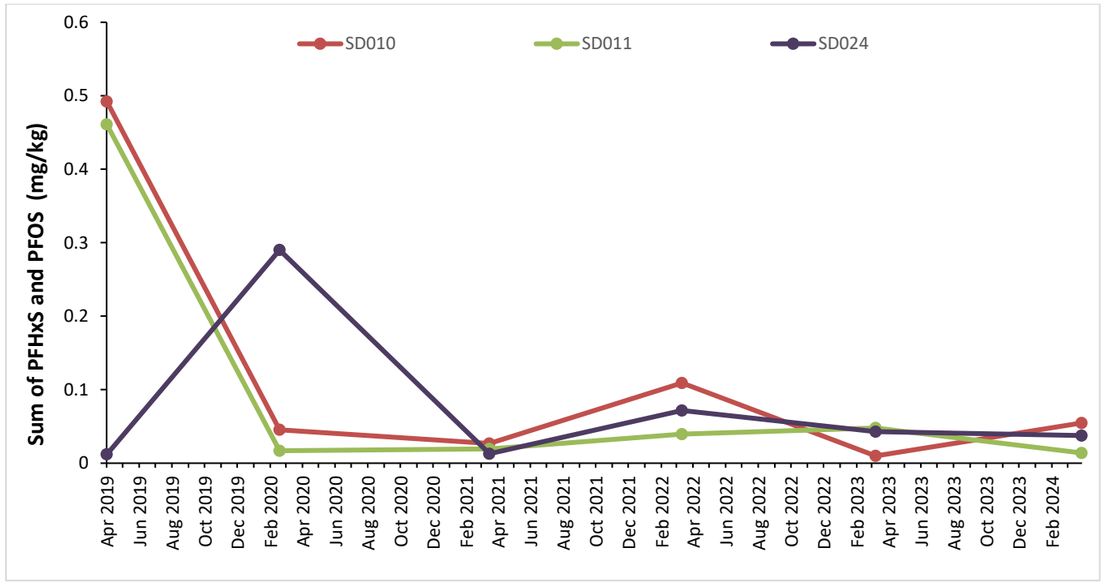
Graph 7-12 Sum of PFHxS and PFOS in Sediment

Drain 1



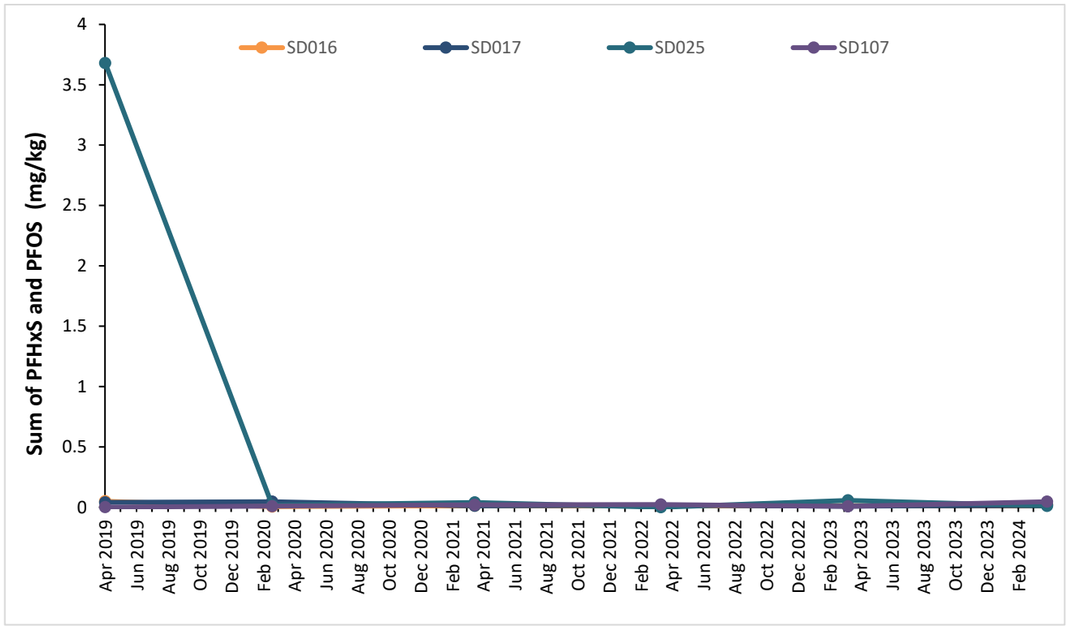
Graph A-36 Sum of PFHxS and PFOS in sediment sampled in Drain 1 locations during OMP monitoring rounds from 2019-2024

Drain 2



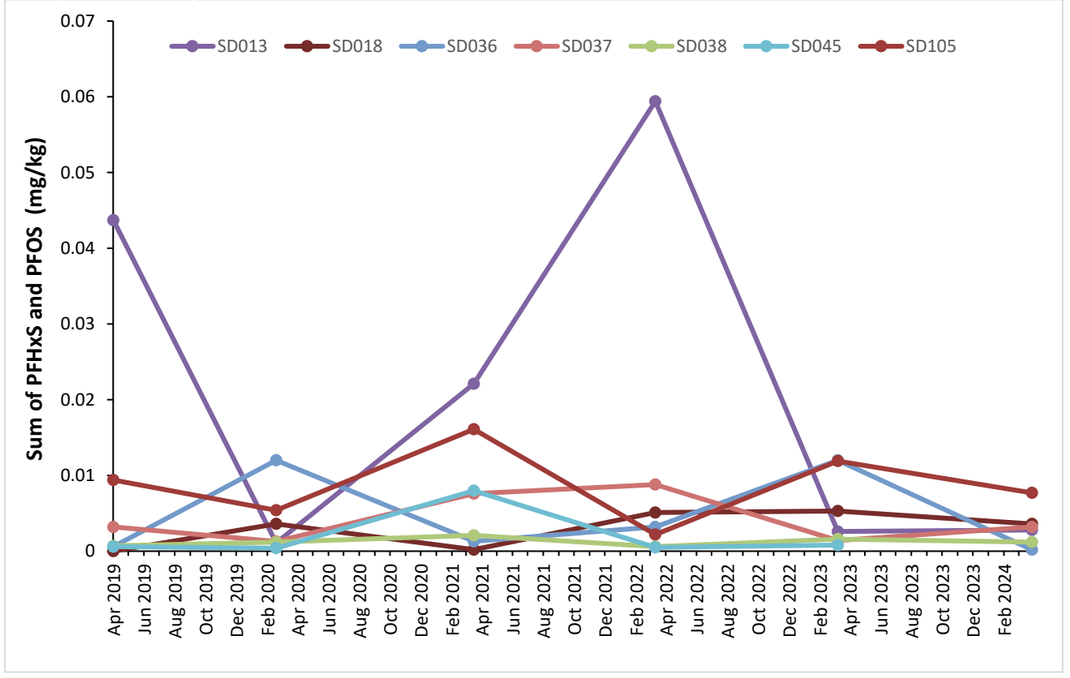
Graph A-37 Sum of PFHxS and PFOS in sediment sampled in Drain 2 locations during OMP monitoring rounds from 2019-2024

Drain 3



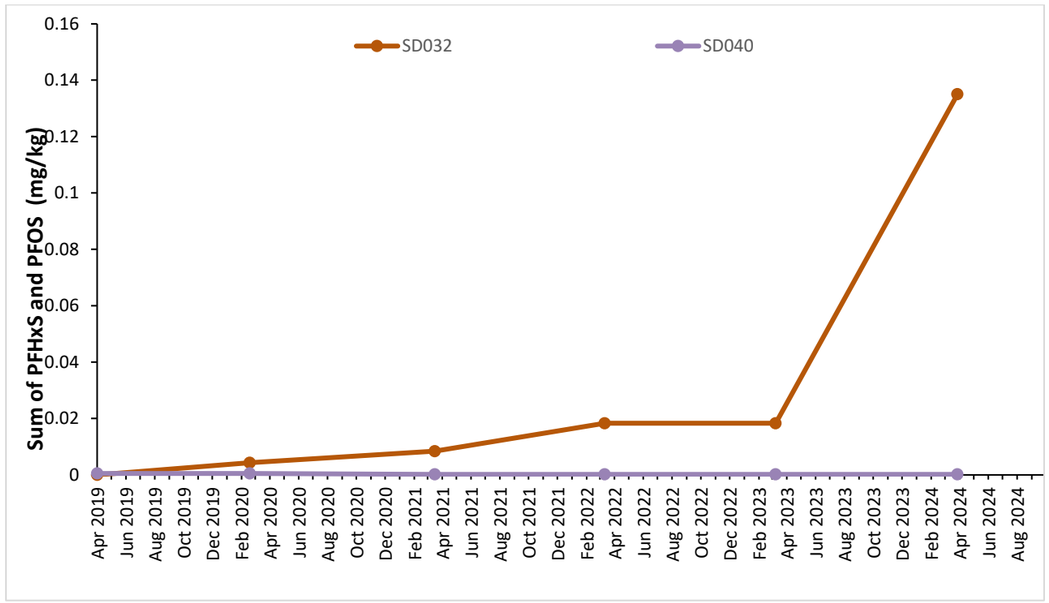
Graph A-38 Sum of PFHxS and PFOS in sediment sampled in Drain 3 locations during OMP monitoring rounds from 2019-2024

Oakey Creek downgradient



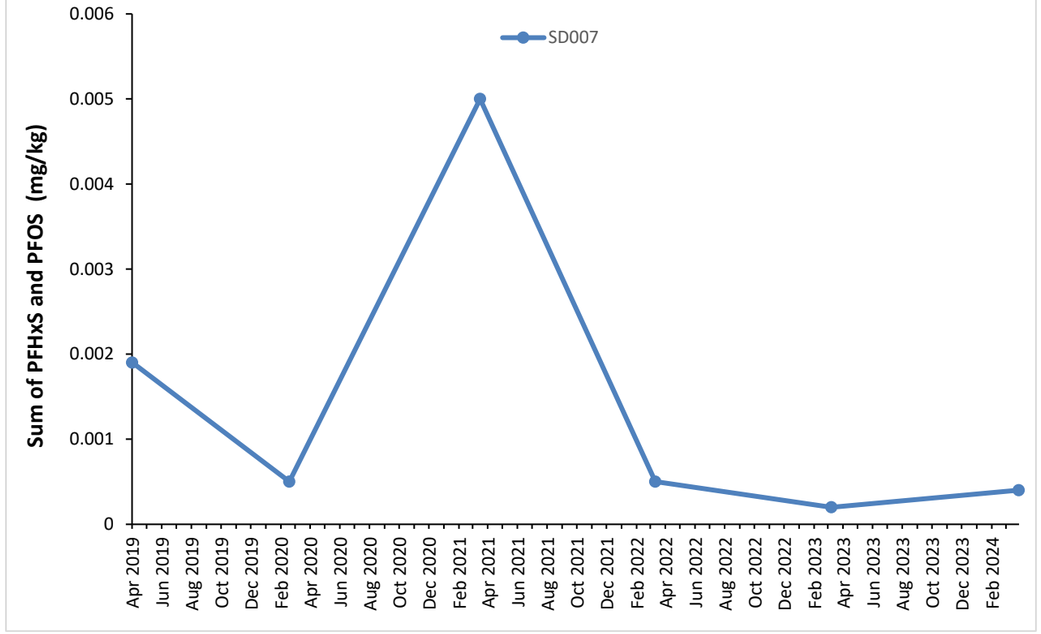
Graph A-39 Sum of PFHxS and PFOS in sediment sampled in Oakey Creek downgradient locations during OMP monitoring rounds from 2019-2024

Oakey Creek upgradient



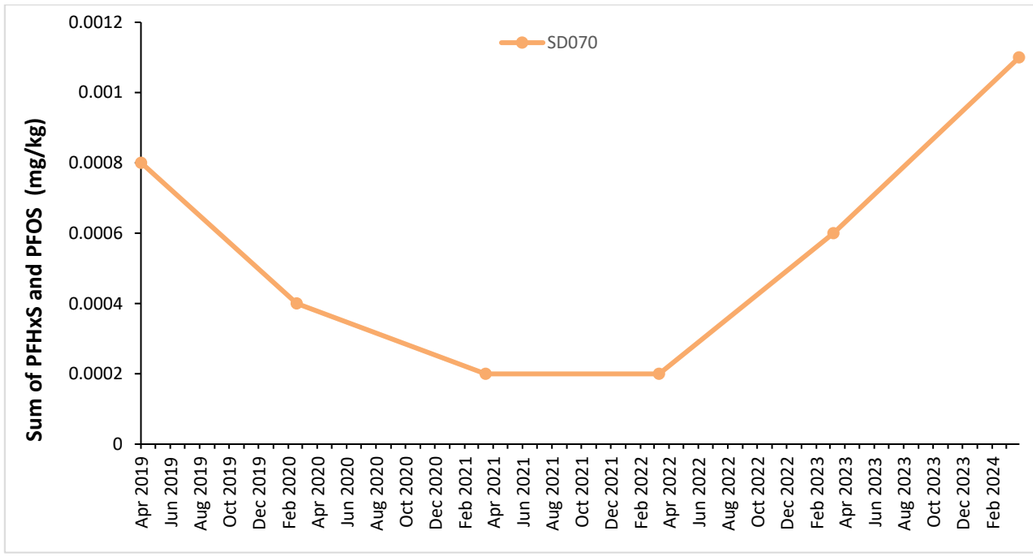
Graph A-40 Sum of PFHxS and PFOS in sediment sampled in Oakey Creek upgradient locations during OMP monitoring rounds from 2019-2024

Doctor Creek



Graph A-41 Sum of PFHxS and PFOS in sediment sampled in Doctor Creek during OMP monitoring rounds from 2019-2024

Westbrook Creek



Graph A-42 Sum of PFHxS and PFOS in sediment sampled in Westbrook Creek during OMP monitoring rounds from 2019-2024

Appendix B

Tables

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW003	OFF BASE	None- tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	26.8	2448	7.290	1.740	83.700	Clear	Clear	No odour	No sheen	Tap sample.
MW003	OFF BASE	None-tap	13/04/2022	-	13/04/2022	-	-	Not gauged.	-	OCA	-	25.2	1884	7.420	1.550	134.800	Clear	Clear	No odour	No sheen	Tap sample.
MW003	OFF BASE	None- tap	2/11/2022	-	2/11/2022	-	-	Not gauged.	-	OCA	-	20.6	2605	7.100	1.750	96.200	Medium	Clearish/ brown	No odour	No sheen	Tap sample.
MW003	OFF BASE	None-tap	18/04/2023	-	18/04/2023	-	-	Not gauged.	-	OCA	-	28.3	2197	7.310	1.860	139.600	Medium	Clear	No odour	No sheen	Tap sample
MW003	OFF BASE	None-tap	25/10/2023	-	25/10/2023	-	-	Not gauged.	-	OCA	-	37.2	2444	7.280	2.400	-131.800	Clear	Clear	No odour	No sheen	Tap sample.
MW003	OFF BASE	None-tap	None-tap	-	8/04/2024	-	-	Not gauged.	-	OCA	-	30.5	2521	7.3	1.02	24.2	Clear	Clear	No odour	No sheen	Tap sample
MW003	OFF BASE	Tap sample	9/10/2024	-	9/10/2024	N/A	N/A	-	-	OCA	-	24.4	2097	7.35	3.4	-80.02	Low	Clear	No odour	No sheen	Tap sample.
MW019	OFF BASE	None-tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	23.5	2648	7.150	3.170	110.200	Low	Clear	No odour	No sheen	Tap sample.
MW019	OFF BASE	None-tap	12/04/2022	-	12/04/2022	-	-	Not gauged.	-	OCA	-	24.1	2135	7.300	2.850	127.600	Clear	Clear	No odour	No sheen	Tap sample.
MW019	OFF BASE	None-tap	27/10/2022	-	27/10/2022	-	-	Not gauged.	-	OCA	-	25.3	2723	7.240	1.980	74.600	Clear	Clear	No odour	No sheen	Tap sample.
MW019	OFF BASE	None-tap	17/04/2023	-	17/04/2023	-	-	Not gauged.	-	OCA	-	28.8	2290	7.210	1.760	100.800	Medium	Brown	No odour	No sheen	Tap sample
MW019	OFF BASE	None-tap	25/10/2023	-	25/10/2023	-	-	Not gauged.	-	OCA	-	25.8	2187	7.120	3.500	-0.400	Low	Brown	No odour	No sheen	Tap sample.
MW019	OFF BASE	None-tap	None-tap	-	9/04/2024	-	-	Not gauged.	-	OCA	-	24.9	2264	7.1	0.01	102.8	Low	Brown	No odour	No sheen	Tap sample
MW019	OFF BASE	Tap sample	9/10/2024	-	9/10/2024	N/A	N/A	-	-	OCA	-	20.2	2215	7.21	3.1	63.7	Low-Moderate	Pale brown	No odour	No sheen	Tap sample.
MW021	OFF BASE	None-tap	17/04/2023	-	17/04/2023	-	-	Not gauged.	-	OCA	-	22.3	1583	7.270	2.930	90.500	Medium	Clear	No odour	No sheen	Tap sample
MW021	OFF BASE	None-tap	None-tap	-	9/04/2024	-	-	Not gauged.	-	OCA	-	23.1	1505	7.11	0.1	75.2	Clear	Clear	No odour	No sheen	Tap sample
MW021	OFF BASE	None-tap	12/04/2022	-	12/04/2022	-	-	Not gauged.	-	OCA	-	25.4	1566	7.300	2.450	128.400	Clear	Clear	No odour	No sheen	Tap sample.
MW022	OFF BASE	None- tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	-	-	-	-	-	-	-	-	-	Stakeholder unable to be contacted.
MW022	OFF BASE	None-tap	12/04/2022	-	12/04/2022	-	-	Not gauged.	-	OCA	-	25.8	1605	7.570	1.700	115.400	Clear	Clear	No odour	No sheen	Tap sample.
MW031	OFF BASE	None- tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	-	-	-	-	-	-	-	-	-	Stakeholder unable to be contacted.
MW032	OFF BASE	None-tap	21/04/2022	-	21/04/2022	-	-	Not gauged.	-	OCA	-	23.0	878	7.560	2.860	134.100	Clear	Clear	No odour	No sheen	Tap sample.
MW032	OFF BASE	None-tap	17/04/2023	-	17/04/2023	-	-	Not gauged.	-	OCA	-	30.2	894	7.340	0.500	182.000	Medium	Clear	No odour	No sheen	Tap sample
MW038	OFF BASE	None- tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	24.1	1047	8.610	1.100	43.400	Clear	Clear	No odour	No sheen	Tap sample.
MW038	OFF BASE	None- tap	3/11/2022	-	3/11/2022	-	-	Not gauged.	-	OCA	-	19.9	1056	8.050	0.790	72.100	Clear	Clear	No odour	No sheen	Tap sample.
MW038	OFF BASE	None- tap	13/04/2023	-	13/04/2023	-	-	Not gauged.	-	OCA	-	-	-	-	-	-	Medium	Clear	No odour	No sheen	Tap sample
MW038	OFF BASE	None- tap	27/10/2023	-	27/10/2023	-	-	Not gauged.	-	OCA	-	22.2	886	7.730	2.570	134.100	Clear	Clear	No odour	No sheen	Tap sample.
MW038	OFF BASE	None-tap	None-tap	-	8/04/2024	-	-	Not gauged.	-	OCA	-	23.7	564	7.86	0.240	22.8	Clear	Clear	No odour	No sheen	Tap sample
MW038	OFF BASE	None- tap	None-tap	-	8/04/2024	-	-	Not gauged.	-	OCA	-	-	-	-	-	-	-	-	-	-	Not sampled- stakeholder declined.
MW038	OFF BASE	Tap sample	1/10/2024	-	1/10/2024	N/A	N/A	-	-	OCA	-	23.3	995	8.2	1.5	-218.5	Low	Clear	No odour	No sheen	Tap sample.
MW056	OFF BASE	13/04/2021	14/10/2021	-	14/10/2021	20.680	Unknown	10.246	-	OCA	-	23.9	2343	6.900	2.510	97.800	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW056	OFF BASE	13/04/2021	12/04/2022	-	12/04/2022	20.460	-	7.271	-	OCA	-	21.7	2972	7.010	2.180	148.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW056	OFF BASE	17/04/2022	27/10/2022	-	27/10/2022	-	-	-	-	OCA	-	24.3	2321	7.130	3.680	108.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW056	OFF BASE	27/10/2022	17/04/2023	-	17/04/2023	21.295	-	8.042	-	OCA	-	21.2	2038	6.980	3.170	51.700	Medium	Clear	No odour	No sheen	HydraSleeve™
MW056	OFF BASE	17/04/2022	25/10/2023	-	25/10/2023	21.250	-	9.125	-	OCA	-	22.5	2021	6.970	3.010	19.900	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW056	OFF BASE	25/10/2023	9/04/2024	-	9/04/2024	12.04	-	9.221	-	OCA	-	21.3	1808	6.85	1.51	198.9	Clear	Clear	No odour	No sheen	HydraSleeve™
MW056	OFF BASE	-	-	-	-	-	21.295	-	-	OCA	-	-	-	-	-	-	-	-	-	-	No access to private property obtained.
MW113	OFF BASE	None-tap	12/04/2022	-	12/04/2022	-	-	Not gauged.	-	OCA	-	24.6	1541	7.070	2.720	112.100	Low	Light brown	No odour	No sheen	Tap sample.
MW113	OFF BASE	None-tap	20/04/2023	-	20/04/2023	-	-	Not gauged.	-	OCA	-	22.2	1539	7.070	1.440	67.700	Medium	Clear	No odour	No sheen	Tap sample
MW113	OFF BASE	None-tap	None-tap	-	10/04/2024	-	-	Not gauged.	-	OCA	-	23.4	1475	7	1.03	51.6	Clear	Clear	No odour	No sheen	Tap sample
MW114	OFF BASE	None-tap	20/04/2022	-	20/04/2022	-	-	Not gauged.	-	OCA	-	22.1	1448	7.260	3.490	161.000	Clear	Clear	No odour	No sheen	Tap sample.
MW114	OFF BASE	None-tap	20/04/2023	-	20/04/2023	-	-	Not gauged.	-	OCA	-	22.2	1540	7.000	4.220	94.200	Medium	Clear	No odour	No sheen	Tap sample
MW114	OFF BASE	None-tap	None-tap	-	10/04/2024	-	-	Not gauged.	-	OCA	-	20.1	1408	6.37	0.05	-59.2	Clear	Clear	No odour	No sheen	Tap sample
MW118	OFF BASE	None-tap	20/04/2022	-	20/04/2022	-	-	Not gauged.	-	OCA	-	22.2	1492	7.300	2.770	160.700	Clear	Clear	No odour	No sheen	Tap sample.
MW118	OFF BASE	None-tap	20/04/2023	-	20/04/2023	-	-	Not gauged.	-	OCA	-	22.0	1595	7.170	3.550	91.100	Medium	Clear	No odour	No sheen	Tap sample
MW118	OFF BASE	None-tap	None-tap	-	10/04/2024	-	-	Not gauged.	-	OCA	-	21.3	1498	7.26	4.75	-39.6	Clear	Clear	No odour	No sheen	Tap sample
MW122	OFF BASE	None-tap	20/04/2022	-	20/04/2022	-	-	Not gauged.	-	OCA	-	21.5	1459	7.440	4.410	161.400	Clear	Clear	No odour	No sheen	Tap sample.

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW122	OFF BASE	None-tap	20/04/2023	-	20/04/2023	-	-	Not gauged.	-	OCA	-	21.8	1638	7.170	4.570	88.100	Medium	Clear /brownish	No odour	No sheen	Tap sample
MW122	OFF BASE	None-tap	None-tap	-	10/04/2024	-	-	Not gauged.	-	OCA	-	22.9	1566	6.99	4.02	-20.5	Clear	Clear	No odour	No sheen	Tap sample
MW132	OFF BASE	None-tap	12/04/2022	-	12/04/2022	-	-	Not gauged.	-	OCA	-	25.0	567	7.810	2.370	117.000	Clear	Clear	No odour	No sheen	Tap sample.
MW132	OFF BASE	None-tap	None-tap	-	3/05/2024	-	-	Not gauged.	-	OCA	-	21.9	3072	6.91	2.40	108.60	Clear	Clear	No odour	No sheen	Tap sample
MW134	OFF BASE	None- tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	24.1	2491	7.160	2.170	-21.100	Low	Orange/brown	No odour	No sheen	Tap sample.
MW134	OFF BASE	None- tap	14/04/2022	-	14/04/2022	-	-	Not gauged.	-	OCA	-	20.3	1600	7.490	2.010	148.300	Clear	Clear	No odour	No sheen	Tap sample.
MW134	OFF BASE	None- tap	2/11/2022	-	2/11/2022	-	-	Not gauged.	-	OCA	-	18.9	2712	7.170	3.010	75.900	Medium	Clear/brown	No odour	No sheen	Tap sample.
MW134	OFF BASE	None- tap	19/04/2023	-	19/04/2023	-	-	Not gauged.	-	OCA	-	20.6	2113	7.100	1.850	92.100	Medium	Brown	No odour	No sheen	Tap sample
MW134	OFF BASE	None- tap	25/10/2023	-	25/10/2023	-	-	Not gauged.	-	OCA	-	25.0	2068	7.040	2.700	-187.700	Clear	Clear	No odour	No sheen	Tap sample.
MW134	OFF BASE	None-tap	None-tap	-	10/04/2024	-	-	Not gauged.	-	OCA	-	19.9	1897	7.1	0.01	115.4	Clear	Clear	No odour	No sheen	Tap sample
MW134	OFF BASE	Tap sample	9/10/2024	-	9/10/2024	N/A	N/A	-	-	OCA	-	21.7	1793	7.14	2.4	-88.7	Low	Clear	No odour	No sheen	Tap sample.
MW139	OFF BASE	None-tap	None-tap	-	10/04/2024	-	-	Not gauged.	-	OCA	-	24.0	1500	7.06	1.18	47.5	Clear	Clear	No odour	No sheen	Tap sample, Ad hoc sample
MW147	OFF BASE	None- tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	22.3	3689	7.020	2.360	-87.200	Medium	Clear	-	No sheen	Tap sample.
MW147	OFF BASE	None- tap	12/04/2022	-	12/04/2022	-	-	Not gauged.	-	OCA	-	23.3	3368	7.160	2.250	120.900	Clear	Clear	No odour	No sheen	Tap sample.
MW147	OFF BASE	None- tap	17/04/2023	-	17/04/2023	-	-	Not gauged.	-	OCA	-	25.2	3633	7.130	1.250	89.800	Medium	Brown	No odour	No sheen	Tap sample
MW147	OFF BASE	None- tap	25/10/2023	-	25/10/2023	-	-	Not gauged.	-	OCA	-	38.8	3970	7.320	1.750	-100.100	Clear	Clear	--	--	Tap sample
MW147	OFF BASE	None-tap	None-tap	-	9/04/2024	-	-	Not gauged.	-	OCA	-	23.8	3489	7.09	0.2	69.4	Clear	Clear	No odour	No sheen	Tap sample
MW147	OFF BASE	Tap sample	11/10/2024	-	11/10/2024	N/A	N/A	-	-	OCA	-	22.1	3349	7.15	5.9	-64.5	Low	Clear	No odour	No sheen	Tap sample.
MW149	OFF BASE	None- tap	12/04/2022	-	12/04/2022	-	-	Not gauged.	-	OCA	-	22.6	1840	7.850	3.700	130.100	Clear	Clear	No odour	No sheen	Tap sample.
MW149	OFF BASE	None- tap	20/04/2023	-	20/04/2023	-	-	Not gauged.	-	OCA	-	21.8	1930	7.360	3.170	63.300	Medium	Clear	Organic odour	No sheen	Tap sample
MW149	OFF BASE	None-tap	None-tap	-	9/04/2024	-	-	Not gauged.	-	OCA	-	23.2	1851	-	0.62	2	Clear	Brown	No odour	No sheen	Tap sample
MW151	OFF BASE	None- tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	22.2	2020	7.170	4.240	83.000	Clear	Clear	No odour	No sheen	Tap sample.
MW151	OFF BASE	None-tap	14/04/2022	-	14/04/2022	-	-	Not gauged.	-	OCA	-	21.5	1636	7.520	3.580	125.900	Clear	Clear	No odour	No sheen	Tap sample.
MW151	OFF BASE	None-tap	27/10/2022	-	27/10/2022	-	-	Not gauged.	-	OCA	-	22.6	2221	7.190	3.400	117.000	Clear	Clear	No odour	No sheen	Tap sample. Bore had been running for roughly an hour before sampling.
MW151	OFF BASE	None-tap	17/04/2023	-	17/04/2023	-	-	Not gauged.	-	OCA	-	22.8	1909	7.060	2.740	182.400	Medium	Clear	No odour	No sheen	Tap sample
MW151	OFF BASE	None-tap	16/08/2023	-	16/08/2023	-	-	Not gauged.	-	OCA	-	22.0	2018	-	4.940	888.500	Low	Clear	No odour	No sheen	Tap sample. pH meter malfunctioned
MW151	OFF BASE	None-tap	25/10/2023	-	25/10/2023	-	-	Not gauged.	-	OCA	-	22.2	1897	6.990	6.460	-125.700	Clear	Clear	No odour	No sheen	Tap sample. Bore had been running for roughly an hour before sampling.
MW151	OFF BASE	None-tap	None-tap	-	9/04/2024	-	-	Not gauged.	-	OCA	-	24.4	1810	7	0.92	103.5	Clear	Clear	No odour	No sheen	Tap sample
MW151	OFF BASE	Tap sample	11/10/2024	-	11/10/2024	N/A	N/A	-	-	OCA	-	22.3	1729	7.15	6.2	-48.4	Low	Clear	No odour	No sheen	Tap sample.
MW157	OFF BASE	None-tap	20/04/2022	-	20/04/2022	-	-	Not gauged.	-	OCA	-	22.1	1810	7.290	3.110	162.600	Clear	Clear	No odour	No sheen	Tap sample.
MW157	OFF BASE	None-tap	20/04/2023	-	20/04/2023	-	-	Not gauged.	-	OCA	-	22.0	1915	7.210	3.620	89.100	Medium	Clear	No odour	No sheen	Tap sample
MW157	OFF BASE	None-tap	None-tap	-	10/04/2024	-	-	Not gauged.	-	OCA	-	22.2	1938	7.07	3.54	45	Clear	Clear	No odour	No sheen	Tap sample
MW160	OFF BASE	None-tap	14/10/2021	-	14/10/2021	-	-	Not gauged.	-	OCA	-	-	-	-	-	-	-	-	-	-	Stakeholder unable to be contacted.
MW167	SOUTH OF SOURCE AREAS	17/04/2021	11/10/2021	-	11/10/2021	15.270	402.428	13.722	388.706	OCA	silty CLAY	23.1	1918	7.410	6.590	130.900	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW167	SOUTH OF SOURCE AREAS	17/04/2021	17/04/2022	-	17/04/2022	-	402.428	12.633	389.795	OCA	silty CLAY	22.5	1749	7.240	0.730	127.700	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW167	SOUTH OF SOURCE AREAS	26/10/2022	27/10/2022	-	27/10/2022	15.860	402.428	12.020	390.408	OCA	silty CLAY	-	-	-	-	-	Clear	Clear	No odour	No sheen	HydraSleeve™Water quality parameters were not collected due to the loss of some of sample volume.
MW167	SOUTH OF SOURCE AREAS	27/10/2022	12/04/2023	-	12/04/2023	15.164	402.428	12.002	390.426	OCA	silty CLAY	15.7	1808	7.170	2.960	77.300	Low	Clear	No odour	No sheen	HydraSleeve™
MW167	SOUTH OF SOURCE AREAS	12/04/2023	24/10/2023	-	24/10/2023	15.160	402.428	12.151	390.277	OCA	silty CLAY	24.0	2085	6.950	2.210	147.700	Medium	Clear/Cloudy	Organic odour	No sheen	HydraSleeve™.
MW167	SOUTH OF SOURCE AREAS	24/10/2023	2/04/2024	-	2/04/2024	15.12	402.428	12.256	390.172	OCA	silty CLAY	23.1	1984	7.05	2.4	112.2	Medium	Brown	No odour	No sheen	HydraSleeve™
MW167	SOUTH OF SOURCE AREAS	01/10/2024	9/10/2024	15.0	9/10/2024	15.49	402.428	12.21	390.218	OCA	silty CLAY	22.2	1807	7.16	7.6	-96.8	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW172	HOT REFUEL AREA AND AFFF SETTLING TANK	14/04/2021	13/10/2021	-	13/10/2021	17.170	402.818	14.247	388.571	OCA	gravelly CLAY	21.9	1546	7.120	2.610	86.600	Low	Clear	No odour	No sheen	HydraSleeve™.

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW172	HOT REFUEL AREA AND AFFF SETTLING TANK	14/04/2021	17/04/2022	-	17/04/2022	17.160	402.818	13.115	389.703	OCA	gravelly CLAY	21.7	746	7.430	2.330	130.800	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW172	HOT REFUEL AREA AND AFFF SETTLING TANK	17/04/2022	26/10/2022	-	26/10/2022	17.160	402.818	12.527	390.291	OCA	gravelly CLAY	22.6	1311	7.450	2.700	88.500	Medium	Brownish/Clear	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW172	HOT REFUEL AREA AND AFFF SETTLING TANK	26/10/2022	12/04/2023	-	12/04/2023	17.145	402.818	12.534	390.284	OCA	gravelly CLAY	17.4	1359	7.360	3.690	90.200	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW172	HOT REFUEL AREA AND AFFF SETTLING TANK	12/04/2023	24/10/2023	-	24/10/2023	17.140	402.818	12.638	390.180	OCA	gravelly CLAY	26.9	1625	7.220	4.080	10.500	Medium	Brown	No odour	No sheen	HydraSleeve™.
MW172	HOT REFUEL AREA AND AFFF SETTLING TANK	24/10/2023	2/04/2024	-	2/04/2024	17.13	402.818	12.778	390.040	OCA	gravelly CLAY	23.8	1804	7.1	2.52	103.8	Medium	Brown	No odour	No sheen	HydraSleeve™
MW172	HOT REFUEL AREA AND AFFF SETTLING TANK	02/10/2024	10/10/2024	17.0	10/10/2024	17.33	402.818	12.74	390.078	OCA	gravelly CLAY	21.0	1561	7.37	3.8	-41.6	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW173	HOT REFUEL AREA AND AFFF SETTLING TANK	14/04/2021	13/10/2021	-	13/10/2021	17.860	403.262	14.464	388.798	OCA	CLAY	21.8	1683	9.670	3.280	86.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW173	HOT REFUEL AREA AND AFFF SETTLING TANK	14/04/2021	17/04/2022	-	17/04/2022	17.650	403.262	13.520	389.742	OCA	CLAY	21.8	1502	7.230	2.530	144.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW173	HOT REFUEL AREA AND AFFF SETTLING TANK	17/04/2022	24/10/2022	-	24/10/2022	17.650	403.262	12.998	390.264	OCA	CLAY	23.8	2385	7.290	3.580	64.700	Med-high	Cloudy/brown	No odour	No sheen	HydraSleeve™. Lots of brown suspended sediment.
MW173	HOT REFUEL AREA AND AFFF SETTLING TANK	24/10/2022	12/04/2023	-	12/04/2023	17.834	403.262	12.925	390.337	OCA	CLAY	16.3	1823	7.320	3.770	91.600	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW173	HOT REFUEL AREA AND AFFF SETTLING TANK	12/04/2023	24/10/2023	-	24/10/2023	17.850	403.262	13.029	390.233	OCA	CLAY	29.7	2093	7.180	3.770	63.400	Medium	Clear/brown	No odour	No sheen	HydraSleeve™.
MW173	HOT REFUEL AREA AND AFFF SETTLING TANK	24/10/2023	2/04/2024	-	2/04/2024	17.81	403.262	13.176	390.086	OCA	CLAY	23.2	1948	6.68	4.37	126.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW173	HOT REFUEL AREA AND AFFF SETTLING TANK	02/10/2024	10/10/2024	17.0	10/10/2024	17.98	403.262	13.13	390.132	OCA	CLAY	19.6	1745	7.34	3.5	-59.3	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW174	SOUTH OF SOURCE AREAS	11/10/2021	13/10/2021	-	13/10/2021	23.120	404.072	14.962	389.110	OCA	clayey SAND/CLAY	22.6	2611	7.080	2.730	55.200	Low	Clear	No odour	No sheen	HydraSleeve™.
MW174	SOUTH OF SOURCE AREAS	14/04/2021	17/04/2022	-	17/04/2022	29.990	404.072	14.014	390.058	OCA	clayey SAND/CLAY	20.2	2158	7.470	0.790	138.600	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW174	SOUTH OF SOURCE AREAS	27/10/2022	2/11/2022	-	2/11/2022	29.990	404.072	13.366	390.706	OCA	clayey SAND/CLAY	20.5	3725	7.320	1.420	78.900	Clear	Clear	Weak sulfuric	No sheen	HydraSleeve™. Minimal settled black/brown sediment.
MW174	SOUTH OF SOURCE AREAS	2/11/2022	13/04/2023	-	13/04/2023	30.191	404.072	13.261	390.811	OCA	clayey SAND/CLAY	19.8	3215	7.150	1.010	133.900	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW174	SOUTH OF SOURCE AREAS	13/04/2023	24/10/2023	-	24/10/2023	31.290	404.072	13.358	390.714	OCA	clayey SAND/CLAY	26.2	3412	7.000	1.150	59.200	Low	Clear	Weak sulfuric	No sheen	HydraSleeve™.
MW174	SOUTH OF SOURCE AREAS	24/10/2023	3/04/2024	-	3/04/2024	29.96	404.072	13.536	390.536	OCA	clayey SAND/CLAY	20.5	2986	7.04	1.46	-16.7	Medium	Cloudy	Sulfuric odour	No sheen	HydraSleeve™
MW174	SOUTH OF SOURCE AREAS	01/10/2024	9/10/2024	28.0	9/10/2024	30.24	404.072	13.51	390.562	OCA	clayey SAND/CLAY	22.5	2860	7.15	1.5	-119.3	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW178	SOUTH OF SOURCE AREAS	17/04/2021	11/10/2021	-	11/10/2021	17.410	403.513	14.062	389.451	OCA	sandy CLAY/clayey SAND	26.6	2972	7.150	1.020	-107.600	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW178	SOUTH OF SOURCE AREAS	17/04/2021	17/04/2022	-	17/04/2022	17.400	403.513	14.370	389.143	OCA	sandy CLAY/clayey SAND	21.3	2149	7.380	0.610	141.500	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW178	SOUTH OF SOURCE AREAS	27/10/2022	2/11/2022	-	2/11/2022	17.400	403.513	12.551	390.962	OCA	sandy CLAY/clayey SAND	20.4	4664	7.050	0.700	68.600	Clear	Clear	No odour	No sheen	HydraSleeve™. Some black/grey settled sediment.
MW178	SOUTH OF SOURCE AREAS	2/11/2022	13/04/2023	-	13/04/2023	18.426	403.513	12.402	391.111	OCA	sandy CLAY/clayey SAND	18.6	3912	6.960	0.570	116.100	Low	Clear	No odour	No sheen	HydraSleeve™
MW178	SOUTH OF SOURCE AREAS	13/04/2023	24/10/2023	-	24/10/2023	17.600	403.513	12.456	391.057	OCA	sandy CLAY/clayey SAND	26.3	8977	7.010	2.190	60.500	Medium	clear	Organic odour	No sheen	HydraSleeve™.
MW178	SOUTH OF SOURCE AREAS	24/10/2023	3/04/2024	-	3/04/2024	18.426	403.513	17.42	386.093	OCA	sandy CLAY/clayey SAND	21.6	3585	6.98	0.77	-31.3	Medium	Brown	No odour	No sheen	HydraSleeve™
MW178	SOUTH OF SOURCE AREAS	01/10/2024	9/10/2024	16.5	9/10/2024	17.3	403.513	14.64	388.873	OCA	sandy CLAY/clayey SAND	23.7	3585	7.07	1.8	-139.2	Low-Moderate	Pale brown	No odour	No sheen	HydraSleeve™.
MW179	SOUTH OF SOURCE AREAS	16/04/2021	11/10/2021	-	11/10/2021	19.420	403.000	14.464	388.536	OCA	-	23.0	3996	7.280	1.530	-23.100	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW179	SOUTH OF SOURCE AREAS	16/04/2021	18/04/2022	-	18/04/2022	20.980	403.006	13.699	389.307	OCA	-	22.3	3529	7.930	0.260	120.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW179	SOUTH OF SOURCE AREAS	27/10/2022	3/11/2022	-	3/11/2022	20.980	403.006	12.947	390.059	OCA	-	21.4	4630	7.090	4.300	70.200	Low	Cloudy	No odour	No sheen	HydraSleeve™.
MW179	SOUTH OF SOURCE AREAS	3/11/2022	13/04/2023	-	13/04/2023	20.906	403.006	12.818	390.188	OCA	-	19.2	3974	7.000	0.410	143.900	Medium	Clear	Weak organic odour	No sheen	HydraSleeve™

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW179	SOUTH OF SOURCE AREAS	13/04/2023	24/10/2023	-	24/10/2023	20.980	403.006	12.781	390.225	OCA	-	28.4	4132	6.870	0.970	-142.600	Medium	clear	No odour	No sheen	HydraSleeve™.
MW179	SOUTH OF SOURCE AREAS	24/10/2023	3/04/2024	-	3/04/2024	20.91	403.006	12.986	390.020	OCA	-	24.0	4062	6.88	0.6	75.9	Clear	Clear	No odour	No sheen	HydraSleeve™
MW179	SOUTH OF SOURCE AREAS	24/10/2023	9/10/2024	13.0	9/10/2024	15.01	403.006	12.92	390.086	OCA	-	23.0	2542	7.05	1.9	-110.1	Low	Clear	No odour	No sheen	HydraSleeve™.
MW187	SOUTH OF SOURCE AREAS	17/04/2021	13/10/2021	-	13/10/2021	18.310	404.576	14.934	389.642	OCA	-	23.9	3698	6.560	0.750	63.000	Low	Clear	No odour	No sheen	HydraSleeve™.
MW187	SOUTH OF SOURCE AREAS	17/04/2021	11/04/2022	-	11/04/2022	18.355	404.576	14.000	390.576	OCA	-	23.6	2173	6.710	1.380	152.700	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW187	SOUTH OF SOURCE AREAS	19/04/2022	27/10/2022	-	27/10/2022	18.355	404.576	13.366	391.210	OCA	-	24.9	4310	6.880	0.980	93.400	Low	Cloudy	No odour	No sheen	HydraSleeve™. Settled grey sediment.
MW187	SOUTH OF SOURCE AREAS	27/10/2022	13/04/2023	-	13/04/2023	18.335	404.576	13.208	391.368	OCA	-	18.9	3857	6.940	0.820	142.700	Low	Clear	No odour	No sheen	HydraSleeve™
MW187	SOUTH OF SOURCE AREAS	13/04/2023	26/10/2023	-	26/10/2023	18.310	404.576	13.321	391.255	OCA	-	26.3	8977	7.010	2.190	6.050	Medium	clear	Organic odour	No sheen	HydraSleeve™.
MW187	SOUTH OF SOURCE AREAS	26/10/2023	3/04/2024	-	3/04/2024	18.34	404.576	13.479	391.097	OCA	-	21.5	3737	6.85	0.6	25.7	Low	Cloudy	No odour	No sheen	HydraSleeve™
MW187	SOUTH OF SOURCE AREAS	01/10/2024	9/10/2024	18.0	9/10/2024	18.53	404.576	13.45	391.126	OCA	-	22.7	3453	6.93	1	-142.7	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW189	SOUTH OF SOURCE AREAS	17/04/2021	13/10/2021	-	13/10/2021	21.030	405.431	15.116	390.315	OCA	-	24.0	4292	6.740	1.470	49.400	Low	Clear	No odour	No sheen	HydraSleeve™.
MW189	SOUTH OF SOURCE AREAS	17/04/2021	11/04/2022	-	11/04/2022	21.070	404.652	13.865	390.787	OCA	-	22.9	3432	6.930	0.710	132.900	Low	Yellow-brown	No odour	No sheen	HydraSleeve™.
MW189	SOUTH OF SOURCE AREAS	18/04/2022	27/10/2022	-	27/10/2022	21.070	404.652	13.209	391.443	OCA	-	24.6	5246	6.840	1.670	47.600	High	cloudy / brown / grey	No odour	No sheen	HydraSleeve™. Suspended brown sediment and settled grey sediment.
MW189	SOUTH OF SOURCE AREAS	27/10/2022	13/04/2023	-	13/04/2023	21.070	404.652	13.032	391.620	OCA	-	17.3	4825	6.750	0.370	109.200	Low	Clear	Weak sulfuric odour	No sheen	HydraSleeve™
MW189	SOUTH OF SOURCE AREAS	13/04/2023	26/10/2023	-	26/10/2023	21.001	404.652	13.124	391.528	OCA	-	21.8	4824	6.740	0.590	-128.600	Clear	Clear	Organic odour	No sheen	HydraSleeve™.
MW189	SOUTH OF SOURCE AREAS	26/10/2023	3/04/2024	-	3/04/2024	21.02	404.652	13.287	391.365	OCA	-	21.5	4698	6.73	0.85	-36.4	Clear	Clear	Organic odour	No sheen	HydraSleeve™
MW189	SOUTH OF SOURCE AREAS	01/10/2024	9/10/2024	21.0	9/10/2024	20.97	404.652	13.25	391.402	OCA	-	22.3	4903	6.81	1.3	-198.6	Low	Clear	No odour	No sheen	HydraSleeve™.
MW193	AFFF SETTLING TANK (C59)	14/04/2021	11/10/2021	-	11/10/2021	19.650	405.676	15.723	389.953	OCA	-	23.4	5676	6.920	0.460	-162.800	Clear	Clear	HC odour	Oil globules / sheen	Hydrasleeve™.
MW193	AFFF SETTLING TANK (C59)	14/04/2021	17/04/2022	-	17/04/2022	19.740	405.630	14.585	391.045	OCA	-	23.1	4934	6.850	0.250	91.900	Clear	Clear	HC odour	Heavy sheen	Hydrasleeve™. 97 mm LNAPL.
MW193	AFFF SETTLING TANK (C59)	25/10/2022	26/10/2022	-	26/10/2022	19.740	405.630	13.951	391.679	OCA	-	25.3	5652	6.980	0.860	34.200	Low	Clear	Strong Kerosene/HC odour	Heavy sheen	HydraSleeve™. 92 mm LNAPL. Min settled grey sediment.
MW193	AFFF SETTLING TANK (C59)	26/10/2022	12/04/2023	-	12/04/2023	19.740	405.630	13.943	391.687	OCA	-	22.1	4062	6.950	0.450	55.100	Medium	Clear	Weak hydrocarbon odour	LNAPL present	HydraSleeve™
MW193	AFFF SETTLING TANK (C59)	12/04/2023	24/10/2023	-	24/10/2023	21.630	405.630	14.339	391.291	OCA	-	29.2	4598	6.750	1.400	32.800	Medium	Clear/Cloudy	Weak kerosene/HC odour	Sheen	HydraSleeve™.
MW193	AFFF SETTLING TANK (C59)	24/10/2023	2/04/2024	-	2/04/2024	19.74	405.630	14.215	391.415	OCA	-	24.3	4812	6.86	0.48	-90.9	Low	Clear	Weak hydrocarbon odour	LNAPL present	HydraSleeve™
MW193	AFFF SETTLING TANK (C59)	02/10/2024	10/10/2024	19	10/10/2024	19.43	405.63	14.22	391.41	OCA	-	23.4	4696	6.95	4.1	-165.3	Low-Moderate	Clear on top, grey on bottom	Strong hydrocarbon odour	Sheen	HydraSleeve™.
MW198	AFFF SETTLING TANK (C59)	14/04/2021	11/10/2021	-	11/10/2021	13.470	405.505	7.603	397.902	OCA	-	23.1	2118	6.930	0.540	21.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW198	AFFF SETTLING TANK (C59)	14/04/2021	17/04/2022	-	17/04/2022	13.480	405.505	6.536	398.969	OCA	-	23.2	622	7.030	2.580	114.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW198	AFFF SETTLING TANK (C59)	19/04/2022	25/10/2022	-	25/10/2022	13.500	405.505	6.308	399.197	OCA	-	23.6	4388	7.130	1.260	150.700	Clear	Clear	No odour	No sheen	HydraSleeve™ . Some settled brown sediment.
MW198	AFFF SETTLING TANK (C59)	25/10/2022	12/04/2023	-	12/04/2023	13.475	405.505	6.732	398.773	OCA	-	21.0	634	7.170	3.280	201.200	Medium	Clear	No odour	No sheen	HydraSleeve™
MW198	AFFF SETTLING TANK (C59)	12/04/2023	24/10/2023	-	24/10/2023	13.470	405.505	7.901	397.604	OCA	-	26.1	600	6.880	3.650	44.600	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW198	AFFF SETTLING TANK (C59)	24/10/2023	2/04/2024	-	2/04/2024	13.47	405.505	7.275	398.230	OCA	-	24.4	2980	7.01	1.72	96.2	Clear	Clear	No odour	No sheen	HydraSleeve™
MW198	AFFF SETTLING TANK (C59)	02/10/2024	10/10/2024	13.0	10/10/2024	13.41	405.505	7.65	397.855	OCA	-	22.4	3594	7.13	3.3	-105.5	Low	Clear	No odour	No sheen	HydraSleeve™.
MW201	FORMER FIRE STATION AND FOAM TRAINING AREA	15/04/2021	12/10/2021	-	12/10/2021	19.860	404.900	16.394	388.506	OCA	-	22.1	3824	6.670	1.040	51.800	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW201	FORMER FIRE STATION AND FOAM TRAINING AREA	15/04/2021	17/04/2022	-	17/04/2022	19.830	404.800	14.164	390.636	OCA	-	23.1	3642	6.740	0.560	136.500	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW201	FORMER FIRE STATION AND FOAM TRAINING AREA	20/04/2022	25/10/2022	-	25/10/2022	19.830	404.800	13.727	391.073	OCA	-	22.6	6928	6.690	2.240	162.700	Med-high	Cloudy/brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW201	FORMER FIRE STATION AND FOAM TRAINING AREA	25/10/2022	12/04/2023	-	12/04/2023	19.852	404.800	13.621	391.179	OCA	-	22.2	6540	6.780	1.020	210.500	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW201	FORMER FIRE STATION AND FOAM TRAINING AREA	12/04/2023	25/10/2023	-	25/10/2023	19.840	404.800	13.736	391.064	OCA	-	20.9	5951	6.790	2.160	92.400	Medium	Cloudy	No odour	No sheen	HydraSleeve™. Gatic cover/concrete is cracked.

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW201	FORMER FIRE STATION AND FOAM TRAINING AREA	25/10/2023	2/04/2024	-	2/04/2024	19.8	404.800	13.901	390.899	OCA	-	23.9	5238	6.72	0.76	91.8	Clear	Clear	No odour	No sheen	HydraSleeve™
MW201	FORMER FIRE STATION AND FOAM TRAINING AREA	01/10/2024	9/10/2024	19.0	9/10/2024	19.95	404.8	13.91	390.89	OCA	-	22.0	5213	6.99	1.2	-74.3	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW202	FORMER FIRE STATION AND FOAM TRAINING AREA	17/04/2021	12/10/2021	-	12/10/2021	19.180	405.100	15.482	389.618	OCA	-	22.7	3533	6.890	0.250	45.000	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW202	FORMER FIRE STATION AND FOAM TRAINING AREA	17/04/2021	17/04/2022	-	17/04/2022	19.120	405.000	14.028	390.972	OCA	-	23.7	2768	6.990	0.690	106.600	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW202	FORMER FIRE STATION AND FOAM TRAINING AREA	15/04/2022	24/10/2022	-	24/10/2022	19.120	405.000	13.648	391.352	OCA	-	28.1	3145	7.240	1.600	104.300	Clear	Clear	No odour	No sheen	HydraSleeve™. Some suspended grey sediment.
MW202	FORMER FIRE STATION AND FOAM TRAINING AREA	24/10/2022	12/04/2023	-	12/04/2023	19.114	405.000	13.646	391.354	OCA	-	22.3	2379	6.970	0.270	214.500	Medium	Clear	No odour	No sheen	HydraSleeve™
MW202	FORMER FIRE STATION AND FOAM TRAINING AREA	12/04/2023	25/10/2023	-	25/10/2023	19.190	405.000	13.806	391.194	OCA	-	21.5	2512	6.860	0.570	86.700	Low	Clear	No odour	No sheen	HydraSleeve™.
MW202	FORMER FIRE STATION AND FOAM TRAINING AREA	25/10/2023	2/04/2024	-	2/04/2024	19.16	405.000	13.96	391.040	OCA	-	24.2	2978	6.89	0.66	83.2	Clear	Clear	No odour	No sheen	HydraSleeve™
MW202	FORMER FIRE STATION AND FOAM TRAINING AREA	01/10/2024	9/10/2024	18.5	9/10/2024	19.39	405	13.97	391.03	OCA	-	22.6	2202	7.37	3.5	-27.2	Low-Moderate	Clear on top, pale orange on bottom	No odour	No sheen	HydraSleeve™.
MW203	FORMER FIRE STATION AND FOAM TRAINING AREA	15/04/2021	12/10/2021	-	12/10/2021	20.100	405.100	15.602	389.498	OCA	-	24.3	2946	6.880	4.300	41.100	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW203	FORMER FIRE STATION AND FOAM TRAINING AREA	15/04/2021	17/04/2022	-	17/04/2022	20.110	405.100	14.064	391.036	OCA	-	23.5	2611	6.870	2.330	147.100	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW203	FORMER FIRE STATION AND FOAM TRAINING AREA	24/10/0222	12/04/2023	-	12/04/2023	20.058	405.100	13.646	391.454	OCA	-	21.8	2638	6.900	2.420	205.300	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW203	FORMER FIRE STATION AND FOAM TRAINING AREA	12/04/2023	24/10/2023	-	24/10/2023	20.120	405.100	13.713	391.387	OCA	-	26.4	2775	6.870	2.900	48.200	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW203	FORMER FIRE STATION AND FOAM TRAINING AREA	24/10/2023	2/04/2024	-	2/04/2024	20.07	405.100	13.889	391.211	OCA	-	24.2	4026	6.74	1.69	94.5	Clear	Clear	No odour	No sheen	HydraSleeve™
MW203	FORMER FIRE STATION AND FOAM TRAINING AREA	01/10/2024	9/10/2024	19.0	9/10/2024	20.34	405.1	13.94	391.16	OCA	-	22.2	3730	7.03	2.5	-53	Low	Clear, slightly cloudy	No odour	No sheen	HydraSleeve™.
MW203	FORMER FIRE STATION AND FOAM TRAINING AREA	15/04/2022	24/10/2022	-	24/10/2022	20.110	405.100	13.835	391.265	OCA	-	21.2	4734	9.960	2.190	111.200	Low	Cloudy	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW204	FORMER FIRE STATION AND FOAM TRAINING AREA	17/04/2021	12/10/2021	-	12/10/2021	19.990	405.200	15.782	389.418	OCA	-	22.7	5478	6.840	4.280	59.300	Low	Clear	No odour	No sheen	HydraSleeve™.
MW204	FORMER FIRE STATION AND FOAM TRAINING AREA	17/04/2021	20/04/2022	-	20/04/2022	19.970	405.200	14.464	390.736	OCA	-	21.5	3831	7.050	2.190	172.900	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW204	FORMER FIRE STATION AND FOAM TRAINING AREA	16/04/2022	24/10/2022	-	24/10/2022	19.970	405.200	14.117	391.083	OCA	-	-	-	-	-	-	Clear	Clear	No odour	No sheen	HydraSleeve™. Water quality parameters missed.
MW204	FORMER FIRE STATION AND FOAM TRAINING AREA	24/10/2022	12/04/2023	-	12/04/2023	19.988	405.200	13.942	391.258	OCA	-	22.2	4874	6.840	2.400	193.000	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW204	FORMER FIRE STATION AND FOAM TRAINING AREA	12/04/2023	24/10/2023	-	24/10/2023	19.980	405.200	14.003	391.197	OCA	-	26.9	5870	6.900	3.760	56.200	Medium	Brown	No odour	No sheen	HydraSleeve™.
MW204	FORMER FIRE STATION AND FOAM TRAINING AREA	24/10/2023	2/04/2024	-	2/04/2024	19.97	405.200	14.203	390.997	OCA	-	23.3	6245	6.81	1.71	87.4	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
MW204	FORMER FIRE STATION AND FOAM TRAINING AREA	01/10/2024	9/10/2024	19.0	9/10/2024	20.1	405.2	13.97	391.23	OCA	-	21.9	6377	7.12	2.8	-59	Low	Clear	No odour	No sheen	HydraSleeve™.
MW205	FORMER FIRE STATION AND FOAM TRAINING AREA	17/04/2021	12/10/2021	-	12/10/2021	20.090	405.700	16.239	389.461	OCA	-	22.9	2338	6.910	2.760	51.500	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW205	FORMER FIRE STATION AND FOAM TRAINING AREA	17/04/2021	20/04/2022	-	20/04/2022	20.020	405.700	15.034	390.666	OCA	-	22.9	1880	7.260	1.900	164.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW205	FORMER FIRE STATION AND FOAM TRAINING AREA	14/04/2022	24/10/2022	-	24/10/2022	20.020	405.700	14.569	391.131	OCA	-	25.5	6879	6.720	2.260	116.000	Med-high	Cloudy/brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW205	FORMER FIRE STATION AND FOAM TRAINING AREA	24/10/2022	12/04/2023	-	12/04/2023	20.051	405.700	14.412	391.288	OCA	-	21.9	4712	6.620	2.740	201.900	Medium	Cloudy	No odour	No sheen	HydraSleeve™

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW205	FORMER FIRE STATION AND FOAM TRAINING AREA	12/04/2023	24/10/2023	-	24/10/2023	20.100	405.700	14.511	391.189	OCA	-	27.1	4652	6.620	3.460	64.500	Medium	Brown/Cloudy	No odour	No sheen	HydraSleeve™.
MW205	FORMER FIRE STATION AND FOAM TRAINING AREA	24/10/2023	2/04/2024	-	2/04/2024	20.07	405.700	14.746	390.954	OCA	-	24.9	4395	6.63	2.25	98	Clear	Clear	No odour	No sheen	HydraSleeve™
MW205	FORMER FIRE STATION AND FOAM TRAINING AREA	01/10/2024	9/10/2024	19.0	9/10/2024	20.07	405.7	14.75	390.95	OCA	-	23.0	4122	6.93	3.1	-46.3	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW206	AFFF SETTLING TANK (C59)	14/04/2021	11/10/2021	-	11/10/2021	19.130	405.720	14.461	391.259	OCA	-	23.7	4156	7.200	1.650	-9.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW206	AFFF SETTLING TANK (C59)	14/04/2021	21/04/2022	-	21/04/2022	19.115	405.720	13.046	392.674	OCA	-	24.4	3957	7.190	0.680	143.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW207	AFFF SETTLING TANK (C59)	Unknown	17/04/2022	-	17/04/2022	20.435	405.416	14.537	390.879	OCA	-	24.5	2728	7.030	0.330	92.700	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW207	AFFF SETTLING TANK (C59)	15/04/2022	25/10/2022	-	25/10/2022	20.435	405.416	13.996	391.420	OCA	-	24.0	4138	7.430	2.000	132.200	med-high	Cloudy/grey	No odour	No sheen	HydraSleeve™. Suspended and settled grey sediment. Sampled instead of MW206, which was not accessible.
MW207	AFFF SETTLING TANK (C59)	25/10/2022	12/04/2023	-	12/04/2023	20.432	405.416	13.874	391.542	OCA	-	23.2	3891	7.140	0.480	214.700	Medium	Clear	No odour	No sheen	HydraSleeve™
MW207	AFFF SETTLING TANK (C59)	12/04/2023	25/10/2023	-	25/10/2023	20.420	405.416	14.002	391.414	OCA	-	23.1	4286	7.040	0.640	68.100	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW207	AFFF SETTLING TANK (C59)	25/10/2023	2/04/2024	-	2/04/2024	20.44	405.416	14.178	391.238	OCA	-	23.7	4390	6.99	0.36	54.2	Clear	Clear	No odour	No sheen	HydraSleeve™
MW207	AFFF SETTLING TANK (C59)	02/10/2024	10/10/2024	19.0	10/10/2024	20.45	405.416	14.2	391.216	OCA	-	23.7	3773	7.18	1.9	-147.9	Low-Moderate	Pale brown/cloudy on top, brown on bottom	No odour	No sheen	HydraSleeve™.
MW221	AFFF SETTLING TANK (C59)	14/04/2021	12/10/2021	-	12/10/2021	19.350	405.496	15.673	389.823	OCA	-	24.7	2269	7.260	0.600	22.500	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW221	AFFF SETTLING TANK (C59)	14/04/2021	17/04/2022	-	17/04/2022	19.310	405.496	14.493	391.003	OCA	-	22.4	1587	7.110	0.910	159.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW221	AFFF SETTLING TANK (C59)	17/04/2022	25/10/2022	-	25/10/2022	19.310	405.496	13.953	391.543	OCA	-	24.8	2198	7.420	0.990	132.600	Low	Clear/brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW221	AFFF SETTLING TANK (C59)	25/10/2022	12/04/2023	-	12/04/2023	19.234	405.496	13.839	391.657	OCA	-	22.6	1856	7.240	0.670	142.300	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW221	AFFF SETTLING TANK (C59)	12/04/2023	25/10/2023	-	25/10/2023	19.290	405.496	13.921	391.575	OCA	-	24.6	1989	7.160	1.150	-37.500	High	Brown	No odour	No sheen	HydraSleeve™.
MW221	AFFF SETTLING TANK (C59)	25/10/2023	2/04/2024	-	2/04/2024	19.13	405.496	14.11	391.386	OCA	-	23.6	2072	7.05	0.81	-29	High	Brown	No odour	No sheen	HydraSleeve™
MW221	AFFF SETTLING TANK (C59)	02/10/2024	9/10/2024	19.0	9/10/2024	19.14	405.496	14.1	391.396	OCA	-	22.7	1804	7.25	2.1	-106.1	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW222	DESTROYED	14/04/2021	12/10/2021	-	12/10/2021	19.010	405.658	15.896	389.762	OCA	-	23.4	2626	7.150	3.800	58.400	Medium	Light brown	No odour	No sheen	Hydrasleeve™.
MW222	DESTROYED	14/04/2021	17/04/2022	-	17/04/2022	18.930	405.716	14.663	391.053	OCA	-	22.6	2052	7.240	1.820	148.100	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW222	DESTROYED	17/04/2022	26/10/2022	-	26/10/2022	18.930	405.716	14.084	391.632	OCA	-	23.4	2624	7.360	2.710	81.500	Medium	Clear/brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW222	DESTROYED	26/10/2022	12/04/2023	-	12/04/2023	18.568	405.716	13.971	391.745	OCA	-	22.9	2209	7.300	1.730	194.900	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW222	DESTROYED	12/04/2023	25/10/2023	-	25/10/2023	18.940	405.716	14.081	391.635	OCA	-	25.5	2355	7.190	2.720	104.000	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW222	DESTROYED	25/10/2023	3/04/2024	-	3/04/2024	18.99	405.716	14.321	391.395	OCA	-	23.4	2579	7.2	2.4	74.5	Medium	Cloudy	Organic odour	No sheen	HydraSleeve™
MW222	DESTROYED	02/10/2024	10/10/2024	19.0	10/10/2024	19.01	405.716	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Lost beneath asphalt.
MW223	DESTROYED	14/04/2021	12/10/2021	-	12/10/2021	20.920	405.788	15.915	389.873	OCA	-	23.9	2280	7.060	4.720	70.900	Low	Clear	No odour	No sheen	HydraSleeve™.
MW223	DESTROYED	14/04/2021	13/04/2022	-	13/04/2022	20.180	405.845	-	-	OCA	-	-	-	-	-	-	-	-	-	-	HydraSleeve™. Gauging and field parameter data lost due to EDCA fault
MW223	DESTROYED	17/04/2022	26/10/2022	-	26/10/2022	20.180	405.845	12.568	393.277	OCA	-	23.0	3134	7.080	3.600	80.100	Clear	Clear	No odour	No sheen	HydraSleeve™. Some settled brown sediment.
MW223	DESTROYED	26/10/2022	12/04/2023	-	12/04/2023	20.102	405.845	12.562	393.283	OCA	-	21.7	2435	7.070	2.810	184.100	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW223	DESTROYED	12/04/2023	25/10/2023	-	25/10/2023	20.070	405.845	13.147	392.698	OCA	-	25.7	2309	6.990	4.600	-158.800	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW223	DESTROYED	25/10/2023	3/04/2024	-	3/04/2024	20.07	405.845	14.037	391.808	OCA	-	24.3	2502	6.96	3.17	71	Clear	Clear	No odour	No sheen	HydraSleeve™
MW223	DESTROYED	02/10/2024	10/10/2024	19.5	10/10/2024	20.92	405.845	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Lost beneath asphalt.
MW229	SOUTH OF SOURCE AREAS	14/04/2021	12/10/2021	-	12/10/2021	15.680	405.533	4.307	401.226	OCA	-	27.7	2215	7.580	0.750	-20.800	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW229	SOUTH OF SOURCE AREAS	14/04/2021	13/04/2022	-	13/04/2022	15.660	405.533	-	-	OCA	-	-	-	-	-	-	-	-	-	-	HydraSleeve™. Gauging and field parameter data lost due to EDCA fault.
MW229	SOUTH OF SOURCE AREAS	20/04/2022	27/10/2022	-	27/10/2022	15.660	405.533	2.715	402.818	OCA	-	24.3	2074	7.550	1.090	77.000	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW229	SOUTH OF SOURCE AREAS	27/10/2022	13/04/2023	-	13/04/2023	15.646	405.533	2.731	402.802	OCA	-	19.8	1814	7.570	0.510	137.200	Medium	Clear	No odour	No sheen	HydraSleeve™
MW229	SOUTH OF SOURCE AREAS	13/04/2023	25/10/2023	-	25/10/2023	15.720	405.533	3.473	402.060	OCA	-	27.0	1716	7.500	0.700	-109.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW229	SOUTH OF SOURCE AREAS	25/10/2023	3/04/2024	-	3/04/2024	15.68	405.533	2.954	402.579	OCA	-	26.1	1904	7.46	0.51	-30.6	Clear	Clear	No odour	No sheen	HydraSleeve™
MW229	SOUTH OF SOURCE AREAS	02/10/2024	9/10/2024	14.5	9/10/2024	15.54	405.533	3.6	401.933	OCA	-	24.2	1482	7.67	1.4	-152.3	Low	Clear	No odour	No sheen	HydraSleeve™.
MW230	CURRENT FIRE TRAINING AREA	14/04/2021	12/10/2021	-	12/10/2021	18.970	405.416	15.291	390.125	OCA	-	23.2	1872	7.080	3.140	52.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW230	CURRENT FIRE TRAINING AREA	14/04/2021	17/04/2022	-	17/04/2022	18.850	405.416	13.771	391.645	OCA	-	22.8	1346	7.250	2.840	144.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW230	CURRENT FIRE TRAINING AREA	20/04/2022	26/10/2022	-	26/10/2022	18.850	405.416	11.991	393.425	OCA	-	24.7	1420	7.320	3.090	84.500	Low-med	Clear/brown	No odour	No sheen	HydraSleeve™. Suspended brown sediment.
MW230	CURRENT FIRE TRAINING AREA	26/10/2022	12/04/2023	-	12/04/2023	18.850	405.416	12.093	393.323	OCA	-	22.9	1278	7.220	3.250	212.100	Low	Clear	No odour	No sheen	HydraSleeve™
MW230	CURRENT FIRE TRAINING AREA	12/04/2023	25/10/2023	-	25/10/2023	18.980	405.416	13.258	392.158	OCA	-	25.3	1932	7.040	3.090	-136.200	Medium	Cloudy	No odour	No sheen	HydraSleeve™.

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW230	CURRENT FIRE TRAINING AREA	25/10/2023	3/04/2024	-	3/04/2024	18.98	405.416	13.426	391.990	OCA	-	23.5	2068	6.99	2.43	106.5	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
MW230	CURRENT FIRE TRAINING AREA	02/10/2024	9/10/2024	19.0	9/10/2024	19.09	405.416	13.53	391.886	OCA	-	22.1	1667	7.12	2.6	-112.2	Low	Clear	No odour	No sheen	HydraSleeve™.
MW232	CURRENT FIRE TRAINING AREA	14/04/2021	13/10/2021	-	13/10/2021	-	405.898	11.106	394.792	OCA	-	22.5	201	6.680	4.470	75.900	Low	Clear	No odour	No sheen	HydraSleeve™.
MW232	CURRENT FIRE TRAINING AREA	14/04/2021	17/04/2022	-	17/04/2022	12.055	405.898	10.889	395.009	OCA	-	21.8	278	7.190	2.250	142.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW232	CURRENT FIRE TRAINING AREA	17/04/2022	27/10/2022	-	27/10/2022	12.055	405.898	10.923	394.975	OCA	-	20.9	329	7.050	4.110	102.500	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW232	CURRENT FIRE TRAINING AREA	27/10/2022	12/04/2023	-	12/04/2023	13.032	405.898	10.942	394.956	OCA	-	24.4	398	7.310	2.190	190.800	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW232	CURRENT FIRE TRAINING AREA	12/04/2023	25/10/2023	-	25/10/2023	12.070	405.898	11.801	394.097	OCA	-	24.4	568	6.990	5.230	-130.400	High	Brown	No odour	No sheen	Bailer used to collect water sample as there was insufficient water for HydraSleeve™ sampling.
MW232	CURRENT FIRE TRAINING AREA	25/10/2023	3/04/2024	-	3/04/2024	12.06	405.898	11.078	394.820	OCA	-	24.1	218	6.75	0.68	97.7	Low	clear	No odour	No sheen	HydraSleeve™ removed and bailer used.
MW232	CURRENT FIRE TRAINING AREA	02/10/2024	10/10/2024	11.0	10/10/2024	12.08	405.898	12.03	393.868	OCA	-	-	-	-	-	-	-	Dry - no sample	-	-	No sample collected - well effectively dry.
MW233	EAST OF SOURCE AREAS	17/04/2021	14/10/2021	-	14/10/2021	17.840	406.470	15.884	390.586	OCA	-	23.0	1037	7.280	4.560	74.200	Turbid	Light brown	No odour	No sheen	HydraSleeve™.
MW233	EAST OF SOURCE AREAS	17/04/2021	20/04/2022	-	20/04/2022	17.780	406.470	14.564	391.906	OCA	-	22.1	850	7.560	3.400	142.000	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW233	EAST OF SOURCE AREAS	20/04/2022	24/11/2022	-	24/11/2022	17.780	406.470	14.564	391.906	OCA	-	22.1	850	7.560	3.400	142.000	Medium	Clear	No odour	No sheen	HydraSleeve™. Some suspended and settled brown sediment.
MW233	EAST OF SOURCE AREAS	24/11/2022	13/04/2023	-	13/04/2023	17.802	406.470	13.993	392.477	OCA	-	20.2	745	7.270	1.520	107.300	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW233	EAST OF SOURCE AREAS	13/04/2023	26/10/2023	-	26/10/2023	17.830	406.470	14.123	392.347	OCA	-	22.8	845	7.400	2.670	-31.400	high	brown	No odour	No sheen	HydraSleeve™.
MW233	EAST OF SOURCE AREAS	26/10/2023	3/04/2024	-	3/04/2024	17.75	406.470	14.316	392.154	OCA	-	25.0	859	7.23	1.47	108.4	Clear	Clear	No odour	No sheen	HydraSleeve™
MW233	EAST OF SOURCE AREAS	02/10/2024	10/10/2024	17.5	10/10/2024	17.78	406.47	13.31	393.16	OCA	-	21.8	369	7.15	4.3	-63.1	Moderate-High	Pale brown on top, brown on bottom	No odour	No sheen	HydraSleeve™
MW235	FORMER FUEL COMPOUND AND HOT REFUEL AREA	14/04/2021	13/10/2021	-	13/10/2021	22.650	406.308	16.311	389.997	OCA	-	23.3	1816	6.730	0.760	-51.000	Low	Light brown	No odour	No sheen	HydraSleeve™.
MW235	FORMER FUEL COMPOUND AND HOT REFUEL AREA	14/04/2021	20/04/2022	-	20/04/2022	22.540	406.308	15.130	391.178	OCA	-	23.1	1089	7.090	0.780	165.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW235	FORMER FUEL COMPOUND AND HOT REFUEL AREA	20/04/2022	26/10/2022	-	26/10/2022	22.540	406.308	14.533	391.775	OCA	-	25.2	1907	7.020	2.900	128.800	Meidum	Clearish/Brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW235	FORMER FUEL COMPOUND AND HOT REFUEL AREA	26/10/2022	11/04/2023	-	11/04/2023	23.562	406.308	14.434	391.874	OCA	-	23.0	1740	6.990	2.060	53.600	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW235	FORMER FUEL COMPOUND AND HOT REFUEL AREA	11/04/2023	26/10/2023	-	26/10/2023	22.580	406.308	14.514	391.794	OCA	-	18.8	1953	7.000	2.950	41.300	Medium	cloudy	No odour	No sheen	HydraSleeve™.
MW235	FORMER FUEL COMPOUND AND HOT REFUEL AREA	26/10/2023	4/04/2024	-	4/04/2024	22.59	406.308	14.758	391.550	OCA	-	22.5	1920	6.94	2.43	-45.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW235	FORMER FUEL COMPOUND AND HOT REFUEL AREA	02/10/2024	10/10/2024	14.5	10/10/2024	22.27	406.308	14.79	391.518	OCA	-	21.6	1790	7	2.4	-84.9	Low	Clear	No odour	No sheen	HydraSleeve™
MW236	FORMER FUEL COMPOUND AND HOT REFUEL AREA	14/04/2021	20/04/2022	-	20/04/2022	16.670	405.653	14.978	390.675	OCA	-	22.8	565	6.680	0.840	172.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW236	FORMER FUEL COMPOUND AND HOT REFUEL AREA	20/04/2022	26/10/2022	-	26/10/2022	16.670	405.653	14.380	391.273	OCA	-	25.1	1495	6.630	1.800	123.600	Low	Brownish/clear	No odour	No sheen	HydraSleeve™. Brown settled sediment.
MW236	FORMER FUEL COMPOUND AND HOT REFUEL AREA	26/10/2022	11/04/2023	-	11/04/2023	16.780	405.653	14.284	391.369	OCA	-	21.1	1139	6.750	1.470	56.000	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW236	FORMER FUEL COMPOUND AND HOT REFUEL AREA	11/04/2023	26/10/2023	-	26/10/2023	16.810	405.653	14.356	391.297	OCA	-	19.1	1294	6.740	1.670	28.400	Medium	Clear/Cloudy	No odour	No sheen	HydraSleeve™.
MW236	FORMER FUEL COMPOUND AND HOT REFUEL AREA	-	26/10/2023	4/04/2024	4/04/2024	16.720	405.653	16.186	389.467	OCA	-	24.8	2013	6.360	1.380	76.000	Turbid	Clear	No odour	No sheen	Grab sample with bailer.
MW236	FORMER FUEL COMPOUND AND HOT REFUEL AREA	26/10/2023	4/04/2024	-	4/04/2024	16.21	405.653	14.601	391.052	OCA	-	22.0	1641	6.76	1.62	-43.6	Clear	Clear	No odour	No sheen	HydraSleeve™
MW236	FORMER FUEL COMPOUND AND HOT REFUEL AREA	02/10/2024	10/10/2024	16.0	10/10/2024	16.88	405.653	14.62	391.033	OCA	-	21.1	1320	6.87	0.7	-108.9	Low	Clear	No odour	No sheen	HydraSleeve™ - HydraSleeve™ only half full.
MW241	FORMER FUEL COMPOUND AND HOT REFUEL AREA	14/04/2021	13/10/2021	-	13/10/2021	18.080	405.883	16.046	389.837	OCA	-	23.6	935	6.780	4.410	74.600	Turbid	Clear	No odour	No sheen	Hydrasleeve™.
MW241	FORMER FUEL COMPOUND AND HOT REFUEL AREA	14/04/2021	19/04/2022	-	19/04/2022	18.070	405.883	14.796	391.087	OCA	-	22.6	726	7.300	3.210	153.100	Clear	Clear	No odour	No sheen	Hydrasleeve™.

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW241	FORMER FUEL COMPOUND AND HOT REFUEL AREA	19/04/2022	26/10/2022	-	26/10/2022	18.070	405.883	14.232	391.651	OCA	-	23.2	865	7.100	3.640	103.100	Low-med	Clear	No odour	No sheen	HydraSleeve™. Brown suspended and settled sediment.
MW241	FORMER FUEL COMPOUND AND HOT REFUEL AREA	26/10/2022	11/04/2023	-	11/04/2023	18.102	405.883	14.159	391.724	OCA	-	20.6	733	7.160	3.700	48.700	Low	Clear	No odour	No sheen	HydraSleeve™
MW241	FORMER FUEL COMPOUND AND HOT REFUEL AREA	11/04/2023	26/10/2023	-	26/10/2023	18.510	405.883	14.282	391.601	OCA	-	19.7	796	7.110	4.430	36.100	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW241	FORMER FUEL COMPOUND AND HOT REFUEL AREA	26/10/2023	4/04/2024	-	4/04/2024	18.12	405.883	14.493	391.390	OCA	-	22.1	781	7.09	3.7	-65.2	Clear	Clear	No odour	No sheen	HydraSleeve™
MW241	FORMER FUEL COMPOUND AND HOT REFUEL AREA	02/10/2024	10/10/2024	17.0	10/10/2024	18.1	405.883	14.52	391.363	OCA	-	21.6	734	7.29	3.8	-53.1	Low	Clear	No odour	No sheen	HydraSleeve™.
MW242	DESTROYED	20/04/2021	11/10/2021	-	11/10/2021	20.030	402.030	14.771	387.259	OCA	-	24.5	2351	7.580	1.630	-33.800	Low	Clear	No odour	No sheen	HydraSleeve™.
MW242	DESTROYED	20/04/2021	18/04/2022	-	18/04/2022	20.000	402.030	13.365	388.665	OCA	-	23.4	672	11.240	2.740	36.700	Clear	Clear	No odour	No sheen	Bailed due to damaged well moument. Moument no longer present.
MW242	DESTROYED	Not installed.	24/11/2022	-	24/11/2022	20.000	-	Not gauged.	-	OCA	-	22.2	10532	7.040	5.400	130.200	High	Brown	No odour	No sheen	Monument recently replaced, sampled with bailer. Insuffcient water to install HydraSleeve™. Suspended brown sediment. Inadvertently not gauged. Bore sampled in replacement to MW242.
MW242	DESTROYED	-	-	19.0	-	20.03	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Well Destroyed.
MW243	WEST OF SOURCE AREAS	27/10/2022	14/04/2023	-	14/04/2023	6.831	-	6.732	-	OCA	-	-	-	-	-	-	-	-	-	-	HydraSleeve™. Insufficient volume for parameter measurements. Bore sampled in replacement to MW242.
MW243	WEST OF SOURCE AREAS	26/10/2023	5/04/2024	-	5/04/2024	6.82	402.030	6.542	395.488	OCA	-	-	-	-	-	-	-	-	-	-	HydraSleeve™. Insufficient volume for parameters.
MW243	WEST OF SOURCE AREAS	-	-	-	-	6.831	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	-
MW243	WEST OF SOURCE AREAS	14/04/2023	Not sampled	-	-	6.860	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Well was dry.
MW245	WEST OF SOURCE AREAS	20/04/2021	11/10/2021	-	11/10/2021	20.550	402.981	15.696	387.285	OCA	-	21.9	1535	7.150	3.320	66.700	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW245	WEST OF SOURCE AREAS	20/04/2021	18/04/2022	-	18/04/2022	21.925	402.981	14.455	388.526	OCA	-	20.1	1326	7.260	2.720	175.000	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW245	WEST OF SOURCE AREAS	18/04/2022	3/11/2022	-	3/11/2022	21.925	402.981	14.010	388.971	OCA	-	20.4	1815	6.990	2.390	80.800	Medium	Clear	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW245	WEST OF SOURCE AREAS	3/11/2022	13/04/2023	-	13/04/2023	21.929	402.981	14.032	388.949	OCA	-	24.0	1582	6.980	1.960	128.700	Medium	Clear	No odour	No sheen	HydraSleeve™
MW245	WEST OF SOURCE AREAS	13/04/2023	26/10/2023	-	26/10/2023	21.950	402.981	14.420	388.561	OCA	-	24.9	1540	6.880	2.670	-115.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW245	WEST OF SOURCE AREAS	26/10/2023	5/04/2024	-	5/04/2024	22.13	402.981	14.206	388.775	OCA	-	23.1	1514	6.92	5.69	-29	Clear	Clear	No odour	No sheen	HydraSleeve™
MW245	WEST OF SOURCE AREAS	30/09/2024	8/10/2024	20.0	8/10/2024	22.09	402.981	14.17	388.811	OCA	-	22.0	1724	6.91	4.4	-172.6	Low	Clear	No odour	No sheen	Shallow well - dry.
MW249	NORTH OF SOURCE AREAS	14/04/2021	13/10/2021	-	13/10/2021	18.760	404.769	15.243	389.526	OCA	-	21.9	1699	7.060	3.860	73.400	Low	Clear	No odour	No sheen	Hydrasleeve™.
MW249	NORTH OF SOURCE AREAS	14/04/2021	19/04/2022	-	19/04/2022	18.700	404.769	14.176	390.593	OCA	-	20.9	1268	7.640	1.810	156.400	Clear	Clear	No odour	No sheen	Hydrasleeve™.
MW249	NORTH OF SOURCE AREAS	19/04/2022	26/10/2022	-	26/10/2022	18.700	404.769	13.538	391.231	OCA	-	24.4	1594	7.150	3.060	94.400	Med-high	Brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW249	NORTH OF SOURCE AREAS	26/10/2022	11/04/2023	-	11/04/2023	18.732	404.769	13.489	391.280	OCA	-	20.9	1487	7.270	3.530	53.800	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW249	NORTH OF SOURCE AREAS	11/04/2023	26/10/2023	-	26/10/2023	18.740	404.769	13.568	391.201	OCA	-	20.8	1550	7.250	5.600	25.200	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW249	NORTH OF SOURCE AREAS	26/10/2023	4/04/2024	-	4/04/2024	18.71	404.769	13.777	390.992	OCA	-	22.5	1619	7.19	3.83	-91.1	Medium	Brown	No odour	No sheen	HydraSleeve™
MW249	NORTH OF SOURCE AREAS	02/10/2024	10/10/2024	18.5	10/10/2024	18.94	404.769	13.78	390.989	OCA	-	21.5	1461	7.38	5.1	-63	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW252	NORTH OF SOURCE AREAS	20/10/2020	13/10/2021	-	13/10/2021	16.640	406.162	15.821	390.341	OCA	-	25.3	695	6.670	0.780	61.800	Turbid	Clear	No odour	No sheen	HydraSleeve™.
MW252	NORTH OF SOURCE AREAS	14/04/2021	20/04/2022	-	20/04/2022	16.545	406.162	14.557	391.605	OCA	-	22.6	318	6.730	0.670	170.700	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW252	NORTH OF SOURCE AREAS	20/04/2022	26/10/2022	-	26/10/2022	16.545	406.162	13.915	392.247	OCA	-	23.8	253	6.440	2.500	122.000	Med-high	Brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW252	NORTH OF SOURCE AREAS	26/10/2022	11/04/2023	-	11/04/2023	16.675	406.162	13.836	392.326	OCA	-	21.5	469	6.760	0.910	43.300	High	Brown	No odour	No sheen	HydraSleeve™
MW252	NORTH OF SOURCE AREAS	11/04/2023	26/10/2023	-	26/10/2023	16.620	406.162	13.924	392.238	OCA	-	19.9	536	6.860	2.120	13.600	Medium	Brown	No odour	No sheen	HydraSleeve™.
MW252	NORTH OF SOURCE AREAS	26/10/2023	4/04/2024	-	4/04/2024	16.61	406.162	14.157	392.005	OCA	-	22.1	636	6.77	1.17	-108.2	Low	Cloudy	No odour	No sheen	HydraSleeve™
MW252	NORTH OF SOURCE AREAS	02/10/2024	10/10/2024	15.5	10/10/2024	16.59	406.162	14.25	391.912	OCA	-	22.2	611	7.02	1.5	-83.1	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW253	DECOMMISSIONED	14/04/2021	-	-	-	-	-	-	-	OCA	silty CLAY	-	-	-	-	-	-	-	-	-	Destroyed by remediation project.
MW254	DECOMMISSIONED	14/04/2021	-	-	-	-	-	-	-	OCA	silty CLAY	-	-	-	-	-	-	-	-	-	Destroyed by remediation project.
MW255	OFF BASE	13/04/2021	15/10/2021	-	15/10/2021	24.060	397.784	12.913	384.871	OCA	-	23.0	2796	7.230	3.860	69.000	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW255	OFF BASE	13/04/2021	15/04/2022	-	15/04/2022	23.850	397.784	12.242	385.542	OCA	-	21.4	995	7.930	1.560	94.900	Clear	Clear	No odour	No sheen	Hydrasleeve. J cap not sealing well and needs replacing.
MW255	OFF BASE	16/04/2022	26/10/2023	-	26/10/2023	24.070	397.784	11.410	386.374	OCA	-	22.5	2821	7.130	2.620	9.000	Low	Clear/Cloudy	Organic odour	No Sheen	HydraSleeve™.
MW255	OFF BASE	26/10/2023	10/04/2024	-	10/04/2024	24.11	397.784	11.39	386.394	OCA	-	20.6	2457	7.1	0.1	110.5	Clear	Clear	No odour	No sheen	HydraSleeve™

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW255	OFF BASE	-	-	23.0	-	24.06	397.784	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Could not open - keyholes stripped.
MW255	OFF BASE	Not sampled	-	-	-	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not found
MW255	OFF BASE	16/04/2022	Not sampled	-	Well not found	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Used metal detector but unable to locate well due to heavy overgrowth.
MW257	OFF BASE	17/04/2021	14/10/2021	-	14/10/2021	23.940	400.833	14.563	386.270	OCA	-	26.0	3073	9.660	0.900	-183.500	Low	Clear	Organic odour	No sheen	HydraSleeve™.
MW257	OFF BASE	17/04/2021	15/04/2022	-	15/04/2022	23.945	400.833	13.722	387.111	OCA	-	21.9	453	7.040	0.230	60.900	Clear	Clear	No odour	No sheen	Hydrasleeve. J cap not sealing well and needs replacing.
MW257	OFF BASE	15/04/2022	26/10/2022	-	26/10/2022	23.945	400.833	12.962	387.871	OCA	-	25.5	3280	7.290	0.800	49.300	Clear	Clear	No odour	No sheen	HydraSleeve™. Some organice in HydraSleeve™, minimal settled grey sediment.
MW257	OFF BASE	26/10/2022	14/04/2023	-	14/04/2023	24.094	400.833	12.793	388.040	OCA	-	21.5	2246	7.130	0.400	21.500	Medium	Clear/Yellowish	No odour	No sheen	HydraSleeve™
MW257	OFF BASE	14/04/2023	26/10/2023	-	26/10/2023	23.950	400.833	12.821	388.012	OCA	-	24.3	2977	7.180	0.670	-221.700	Medium	Clear	Sulfuorous	No sheen	HydraSleeve™.
MW257	OFF BASE	26/10/2023	10/04/2024	-	10/04/2024	23.96	400.833	12.752	388.081	OCA	-	20.6	2567	7.15	0.05	25.8	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
MW257	OFF BASE	01/10/2024	9/10/2024	23.0	9/10/2024	24.4	400.833	12.77	388.063	OCA	-	22.3	2609	7.21	0.7	-239	Low-Moderate	Clear on top, black suspended sediment on bottom	No odour	No sheen	HydraSleeve™.
MW262	OFF BASE	19/04/2021	14/10/2021	-	14/10/2021	17.840	398.329	12.339	385.990	OCA	CLAY/GRAVEL/SAND	26.8	2686	7.140	1.500	12.200	Low	Clear	No odour	No sheen	HydraSleeve™.
MW262	OFF BASE	19/04/2021	16/04/2022	-	16/04/2022	17.810	398.329	11.536	386.793	OCA	CLAY/GRAVEL/SAND	23.2	1909	7.010	1.800	116.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW262	OFF BASE	16/04/2022	2/11/2022	-	2/11/2022	17.810	398.329	11.091	387.238	OCA	CLAY/GRAVEL/SAND	20.4	2384	7.310	2.050	78.900	Clearing	Cloudy/brown	No odour	No sheen	HydraSleeve™.
MW262	OFF BASE	2/11/2022	14/04/2023	-	14/04/2023	17.760	398.329	11.011	387.318	OCA	CLAY/GRAVEL/SAND	19.2	1919	7.140	2.210	55.800	Medium	Clear	No odour	No sheen	HydraSleeve™
MW262	OFF BASE	14/04/2023	26/10/2023	-	26/10/2023	17.840	398.329	10.901	387.428	OCA	CLAY/GRAVEL/SAND	23.9	1962	7.160	2.830	-94.500	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW262	OFF BASE	26/10/2023	11/04/2024	-	11/04/2024	17.82	398.329	10.958	387.371	OCA	CLAY/GRAVEL/SAND	20.9	1750	7.03	1.86	-229.6	Clear	Clear	No odour	No sheen	HydraSleeve™
MW262	OFF BASE	01/10/2024	9/10/2024	16.7	9/10/2024	18.24	398.329	10.91	387.419	OCA	CLAY/GRAVEL/SAND	22.6	1751	7.14	3.2	-93.5	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW264	OFF BASE	13/04/2021	14/10/2021	-	14/10/2021	11.040	392.755	8.477	384.278	OCA	-	24.6	3270	6.830	1.000	20.800	Low	Clear	No odour	No sheen	HydraSleeve™.
MW264	OFF BASE	13/04/2021	14/04/2022	-	14/04/2022	11.060	392.755	7.486	385.269	OCA	-	21.5	2347	6.890	0.510	152.400	Turbid	Clear	No odour	No sheen	HydraSleeve™.
MW264	OFF BASE	14/04/2022	-	-	-	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not found
MW264	OFF BASE	14/04/2022	Not sampled	-	Not sampled	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Used metal detector but unable to locate well due to heavy overgrowth.
MW264	OFF BASE	14/04/2022	Not sampled	-	Not sampled	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Well not found.
MW265	OFF BASE	12/04/2021	16/04/2022	-	16/04/2022	19.110	408.398	15.429	392.969	OCA	-	22.9	817	7.250	0.500	109.800	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW265	OFF BASE	16/04/2022	14/04/2023	-	14/04/2023	19.120	408.398	14.898	393.500	OCA	-	22.6	1330	7.020	0.600	90.900	Low	Clear	No odour	No sheen	HydraSleeve™
MW265	OFF BASE	14/04/2023	11/04/2024	-	11/04/2024	19.13	408.398	15.396	393.002	OCA	-	22.6	1077	6.92	0.51	-342.1	Low	Brown	Organic odour	No sheen	HydraSleeve™. New bolts required.
MW266	OFF BASE	20/04/2021	16/04/2022	-	16/04/2022	21.460	401.316	13.481	387.835	OCA	sandy CLAY	23.6	3615	7.110	0.780	140.100	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW266	OFF BASE	16/04/2022	13/04/2023	-	13/04/2023	21.281	401.316	12.963	388.353	OCA	sandy CLAY	24.1	4706	7.040	0.660	210.300	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW266	OFF BASE	13/04/2023	11/04/2024	-	11/04/2024	21.24	401.316	13.061	388.255	OCA	sandy CLAY	21.7	3560	6.96	1.04	-220.4	Medium	Brown	No odour	No sheen	HydraSleeve™
MW267	OFF BASE	15/04/2021	13/04/2022	-	13/04/2022	-	401.392	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Gauging and field parameter data lost due to EDCA fault.
MW267	OFF BASE	13/04/2022	18/04/2023	-	18/04/2023	47.159	401.392	12.269	389.123	OCA	-	23.5	622	7.820	0.490	16.000	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW267	OFF BASE	18/04/2023	8/04/2024	-	8/04/2024	47.37	401.392	12.191	389.201	OCA	-	22.1	9075	9.29	0	-39	Clear	Clear	No odour	No sheen	HydraSleeve™
MW268	OFF BASE	15/04/2021	13/04/2022	-	13/04/2022	-	401.323	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Gauging and field parameter data lost due to EDCA fault
MW268	OFF BASE	13/04/2022	18/04/2023	-	18/04/2023	20.032	401.323	11.801	389.522	OCA	-	20.1	3605	7.050	0.500	98.600	Low	Clear/Cloudy	No odour	No sheen	HydraSleeve™
MW268	OFF BASE	18/04/2023	8/04/2024	-	8/04/2024	20.02	401.323	11.715	389.608	OCA	-	21.4	3381	6.91	0.01	-20	Clear	Clear	No odour	No sheen	HydraSleeve™
MW269	OFF BASE	15/04/2021	13/04/2022	-	13/04/2022	-	401.958	-	-	WCM	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Gauging and field parameter data lost due to EDCA fault.
MW269	OFF BASE	13/04/2022	2/11/2022	-	2/11/2022	86.960	401.958	33.486	368.472	WCM	-	16.1	3134	12.130	1.340	44.300	Clear	Clear	No odour	No sheen	HydraSleeve™. Settled brown sediment.
MW269	OFF BASE	2/11/2022	18/04/2023	-	18/04/2023	80.350	401.958	33.539	368.419	WCM	-	21.5	2573	11.970	0.870	38.000	Medium	Clear	No odour	No sheen	HydraSleeve™
MW269	OFF BASE	18/04/2023	16/08/2023	-	16/08/2023	80.310	401.958	33.400	368.419	WCM	-	22.3	1655	10.950	2.650	-65.400	Low	Clear	No odour	No sheen	HydraSleeve™
MW269	OFF BASE	16/08/2023	25/10/2023	-	25/10/2023	89.500	401.958	33.414	368.544	WCM	-	22.4	1359	11.400	2.840	21.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW269	OFF BASE	25/10/2023	8/04/2024	-	8/04/2024	89.100	401.958	34.115	367.843	WCM	-	22.7	1244	11.22	0.33	-66.6	Clear	Clear	No odour	No sheen	HydraSleeve™
MW269	OFF BASE	01/10/2024	10/10/2024	86.0	10/10/2024	89.95	401.958	33.35	368.608	WCM	-	23.0	1174	11.36	2.4	-163.5	Low	Clear	No odour	No sheen	HydraSleeve™.
MW270	OFF BASE	15/04/2021	13/04/2022	-	13/04/2022	-	404.078	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Gauging and field parameter data lost due to EDCA fault.
MW270	OFF BASE	13/04/2022	10/05/2023	-	10/05/2023	19.700	404.078	13.050	391.028	OCA	-	22.2	4656	6.840	3.000	152.800	Medium	Brown	No odour	No sheen	HydraSleeve™
MW270	OFF BASE	10/05/2023	Blocked at 9.44 mbgl due to roots.	-	-	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not sampled
MW271	OFF BASE	15/04/2021	13/04/2022	-	13/04/2022	-	403.855	-	-	MRV	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Gauging and field parameter data lost due to EDCA fault.
MW271	OFF BASE	13/04/2022	10/05/2023	-	10/05/2023	49.900	403.855	37.400	366.455	MRV	-	22.0	958	9.950	1.000	-182.000	Medium	Clear	Sulfuric odour	No sheen	HydraSleeve™
MW271	OFF BASE	10/05/2023	10/04/2024	-	10/04/2024	63.280	403.855	11.936	391.919	MRV	-	20.1	255	7.59	0.10	-74.2	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
MW272	OFF BASE	19/04/2021	15/10/2021	-	15/10/2021	19.990	397.972	12.662	385.310	OCA	-	23.8	2722	7.210	-	81.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW272	OFF BASE	19/04/2021	16/04/2022	-	16/04/2022	20.040	397.972	11.936	386.036	OCA	-	20.7	1936	7.780	2.360	131.700	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW272	OFF BASE	16/04/2022	27/10/2022	-	27/10/2022	20.040	397.972	11.312	386.660	OCA	-	23.3	2799	7.370	2.500	83.000	Med-high	Clear/brown	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW272	OFF BASE	27/10/2022	13/04/2023	-	13/04/2023	20.955	397.972	11.301	386.671	OCA	-	21.3	2602	7.220	2.220	212.900	Medium	Cloudy	No odour	No sheen	HydraSleeve™
MW272	OFF BASE	13/04/2023	26/10/2023	-	26/10/2023	19.980	397.972	11.191	386.781	OCA	-	22.1	2507	7.210	3.150	-5.100	High	Brown	No odour	No sheen	HydraSleeve™.
MW272	OFF BASE	26/10/2023	8/04/2024	-	8/04/2024	19.970	397.972	11.208	386.764	OCA	-	21.6	2627	7.15	0.00	52.5	Clear	Brown	No odour	No sheen	HydraSleeve™. New bolts required.
MW272	OFF BASE	01/10/2024	9/10/2024	19.0	9/10/2024	20.12	397.972	11.17	386.802	OCA	-	21.5	2376	7.22	3.5	-27.2	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW273	OFF BASE	19/04/2021	16/04/2022	-	16/04/2022	67.090	398.044	18.564	379.480	WCM	-	19.2	228	9.040	0.270	97.900	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW273	OFF BASE	16/04/2022	13/04/2023	-	13/04/2023	66.923	398.044	17.992	380.052	WCM	-	20.6	4247	9.630	0.610	189.800	High	Clear/Yellowish	No odour	No sheen	HydraSleeve™
MW273	OFF BASE	13/04/2023	8/04/2024	-	8/04/2024	65.9	398.044	18.059	379.985	WCM	-	22.3	1180	8.34	0.5	-109.1	Clear	Clear	No odour	No sheen	HydraSleeve™

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW274	OFF BASE	17/04/2021	15/04/2022	-	15/04/2022	32.000	399.947	13.737	386.210	WCM	-	22.5	1225	7.650	0.260	39.600	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW274	OFF BASE	15/04/2022	14/04/2023	-	14/04/2023	32.347	399.947	12.946	387.001	OCA	-	19.2	1290	7.540	0.630	31.200	High	Cloudy	No odour	No sheen	HydraSleeve™
MW274	OFF BASE	14/03/2023	11/04/2024	-	11/04/2024	31.78	399.947	12.799	387.148	OCA	-	30.8	1204	7.44	0.46	-235.8	Clear	Brown	No odour	No sheen	HydraSleeve™
MW275	OFF BASE	17/04/2021	15/04/2022	-	15/04/2022	56.160	399.911	13.690	386.221	MRV	-	23.3	1536	7.740	0.820	61.700	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW275	OFF BASE	15/04/2022	14/04/2023	-	14/04/2023	55.581	399.911	12.892	387.019	MRV	-	18.1	840	7.940	0.390	120.200	High	Cloudy	No odour	No sheen	HydraSleeve™
MW275	OFF BASE	14/04/2023	11/04/2024	-	11/04/2024	55.47	399.911	12.745	387.166	MRV	-	20.5	775	7.7	0.47	-240.7	High	Grey/black	Sulfuric odour	No sheen	HydraSleeve™
MW276	OFF BASE	19/04/2021	14/10/2021	-	14/10/2021	19.840	400.474	14.678	385.796	OCA	-	25.0	3097	6.990	1.040	55.300	Medium	Clear	Organic odour	No sheen	HydraSleeve™.
MW276	OFF BASE	19/04/2021	15/04/2022	-	15/04/2022	19.900	400.474	13.927	386.547	OCA	-	22.8	2123	7.010	0.450	105.400	Clear	Clear	No odour	No sheen	Hydrasleeve. Concrete collar and gatic slightly damaged.
MW276	OFF BASE	15/04/2022	24/11/2022	-	24/11/2022	19.900	400.474	13.535	386.939	OCA	-	23.5	2428	7.120	1.460	101.100	High	Brown	No odour	No sheen	HydraSleeve™. Suspended brown sediment and settled grey sediment. Concrete has been damaged.
MW276	OFF BASE	14/11/2022	13/04/2023	-	13/04/2023	19.856	400.474	13.135	387.339	OCA	-	21.2	2389	7.080	0.460	212.500	Medium	Brown/yellowish	No odour	No sheen	HydraSleeve™
MW276	OFF BASE	13/04/2023	26/10/2023	-	26/10/2023	19.830	400.474	13.049	387.425	OCA	-	23.9	2275	7.060	0.720	-44.100	Medium	Clear/brownish	No odour	No sheen	HydraSleeve™.
MW276	OFF BASE	26/10/2023	11/04/2024	-	11/04/2024	20.75	400.474	13.093	387.381	OCA	-	20.1	3006	7	0.43	212.5	High	Brown	No odour	No sheen	HydraSleeve™
MW276	OFF BASE	01/10/2024	9/10/2024	19.0	9/10/2024	20.28	400.474	13.02	387.454	OCA	-	23.0	2044	7.12	1.1	-156.1	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW278	OFF BASE	16/04/2021	16/04/2022	-	16/04/2022	22.060	404.155	8.763	395.392	OCA	-	23.4	1217	7.120	0.510	113.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW278	OFF BASE	16/04/2022	14/04/2023	-	14/04/2023	22.118	404.155	8.083	396.072	OCA	-	23.3	1240	7.110	0.390	104.400	Medium	Clearish/Cloudy	No odour	No sheen	HydraSleeve™
MW278	OFF BASE	14/04/2023	11/04/2024	-	11/04/2024	22.05	404.155	8.557	395.598	OCA	-	23.0	1248	6.96	0.63	104.4	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
MW279	DESTROYED	16/04/2021	15/04/2022	-	15/04/2022	18.055	406.341	6.408	399.933	OCA	-	22.2	1374	7.160	0.990	120.500	Clear	Clear	No odour	No sheen	Hydrasleeve. Concrete collar slightly damaged.
MW279	DESTROYED	-	-	-	-	Not found	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not found
MW279	DESTROYED	15/04/2022	-	-	-	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not found
MW280	OFF BASE	17/04/2021	14/04/2022	-	14/04/2022	30.175	398.486	11.842	386.644	OCA	-	24.9	2251	7.340	0.270	96.400	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW280	OFF BASE	14/04/2022	14/04/2023	-	14/04/2023	30.004	398.486	10.969	387.517	OCA	-	19.3	2080	7.370	0.720	9.600	Medium-high	Clear	Sulfuric odour	No sheen	HydraSleeve™
MW280	OFF BASE	14/04/2023	11/04/2024	-	11/04/2024	30.04	398.486	10.866	387.620	OCA	-	21.6	2052	7.19	0.34	-356	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
MW281	OFF BASE	20/04/2021	14/04/2022	-	14/04/2022	18.485	396.856	8.725	388.131	OCA	-	23.0	2345	7.060	1.110	126.100	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW281	OFF BASE	14/04/2022	14/04/2023	-	14/04/2023	18.485	396.856	8.121	388.735	OCA	-	20.8	2394	6.880	1.790	80.400	Medium-high	Cloudy	No odour	No sheen	HydraSleeve™
MW281	OFF BASE	14/04/2023	10/04/2024	-	10/04/2024	18.5	396.856	8.379	388.477	OCA	-	19.3	2215	6.78	0.01	69.6	Low	Brown	No odour	No sheen	HydraSleeve™
MW282	OFF BASE	15/04/2021	15/04/2022	-	15/04/2022	16.000	397.327	4.202	393.125	OCA	-	22.7	923	7.050	2.030	126.900	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW282	OFF BASE	15/04/2022	14/04/2023	-	14/04/2023	15.984	397.327	4.729	392.598	OCA	-	20.5	1215	6.890	1.310	25.200	Medium	Clear	No odour	No sheen	HydraSleeve™
MW282	OFF BASE	14/04/2023	11/04/2024	-	11/04/2024	16	397.327	5.069	392.258	OCA	-	22.3	1831	6.72	1.14	-292.4	Clear	Clear	No odour	No sheen	HydraSleeve™
MW283	OFF BASE	20/04/2021	13/04/2022	-	13/04/2022	15.000	395.371	9.675	385.696	OCA	-	22.0	1265	7.260	0.330	132.800	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW283	OFF BASE	13/04/2022	18/04/2023	-	18/04/2023	14.982	395.371	8.743	386.628	OCA	-	21.5	746	7.110	0.660	125.400	High	Clear/brownish	No odour	No sheen	HydraSleeve™
MW283	OFF BASE	18/04/2023	11/04/2024	-	11/04/2024	15	395.371	8.672	386.699	OCA	-	19.1	452	7.37	0.62	-229.9	Medium	Brown	Sulfuric odour	No sheen	HydraSleeve™. New bolts required.
MW285	OFF BASE	15/04/2021	16/04/2022	-	16/04/2022	10.710	398.331	4.729	393.602	OCA	-	21.4	2045	7.200	2.050	131.900	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW285	OFF BASE	16/04/2022	14/04/2023	-	14/04/2023	10.695	398.331	4.924	393.407	OCA	-	21.2	1782	7.520	1.030	104.500	Medium	Clear	No odour	No sheen	HydraSleeve™
MW285	OFF BASE	14/04/2023	11/04/2024	-	11/04/2024	10.67	398.331	5.649	392.682	OCA	-	22.1	1644	7.54	3.54	-246.7	Medium	Grey/black	No odour	No sheen	HydraSleeve™
MW288	OFF BASE	15/04/2021	15/10/2021	-	15/10/2021	-	401.958	34.127	367.831	OCA	-	22.4	2895	11.840	1.460	-226.700	Clear	Clear	No odour	No sheen	Hydrasleeve™.
MW288	OFF BASE	21/04/2021	21/04/2022	-	21/04/2022	21.830	402.161	16.258	385.903	OCA	-	19.7	1020	7.870	0.330	76.800	Clear	Clear	No odour	No sheen	Hydrasleeve. Monument is damaged and lid is broken.
MW288	OFF BASE	21/04/2022	18/04/2023	-	18/04/2023	21.806	402.161	13.024	389.137	OCA	-	18.9	1143	7.590	0.340	28.800	High	Brown	No odour	No sheen	HydraSleeve™
MW288	OFF BASE	18/04/2023	10/04/2024	-	10/04/2024	21.71	402.161	14.3	387.861	OCA	-	18.5	1069	7.55	0.01	10.3	High	Brown	No odour	No sheen	HydraSleeve™
MW289	OFF BASE	21/04/2021	21/04/2022	-	21/04/2022	65.180	402.072	61.785	340.287	WCM	-	20.4	863	7.910	0.990	47.500	Clear	Clear	No odour	No sheen	Hydrasleeve. Monument is damaged and lid is broken.
MW289	OFF BASE	-	-	-	-	Dry	-	-	-	WCM	-	-	-	-	-	-	-	-	-	-	Dry
MW289	OFF BASE	21/04/2022	-	-	-	-	-	-	-	WCM	-	-	-	-	-	-	-	-	-	-	Dry
MW290	OFF BASE	21/04/2021	21/04/2022	-	21/04/2022	19.710	403.688	5.765	397.923	OCA	-	19.6	3774	6.950	0.260	77.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW290	OFF BASE	21/04/2022	19/04/2023	-	19/04/2023	19.694	403.688	5.912	397.776	OCA	-	20.3	3420	6.960	0.660	75.300	Medium	Clear	No odour	No sheen	HydraSleeve™
MW290	OFF BASE	19/04/2023	9/04/2024	-	9/04/2024	19.72	403.688	8.089	395.599	OCA	-	20.2	3822	6.84	0.01	-169.8	Clear	Clear	No odour	No sheen	HydraSleeve™
MW291	OFF BASE	21/04/2021	21/04/2022	-	21/04/2022	56.720	403.709	16.120	387.589	WCM	-	17.5	982	7.570	0.570	73.600	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW291	OFF BASE	21/04/2022	19/04/2023	-	19/04/2023	56.152	403.709	14.786	388.923	WCM	-	20.7	1590	7.540	0.520	18.300	Medium	Clear/ Yellowish	Weak sulfuric odour	No sheen	HydraSleeve™
MW291	OFF BASE	19/04/2023	9/04/2024	-	9/04/2024	56.64	403.709	14.395	389.314	WCM	-	19.9	1584	7.7	0.26	-168.8	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
MW292	OFF BASE	19/04/2021	14/04/2022	-	14/04/2022	19.140	401.818	6.786	395.032	OCA	-	21.0	4407	8.670	0.540	51.500	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW292	OFF BASE	14/04/2022	17/04/2023	-	17/04/2023	18.953	401.818	6.164	395.654	OCA	-	21.5	4894	6.750	0.430	100.400	High	Brown	No odour	No sheen	HydraSleeve™
MW292	OFF BASE	17/04/2023	9/04/2024	-	9/04/2024	18.92	401.818	6.561	395.257	OCA	-	20.8	4481	6.74	0.01	48.4	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
MW293	OFF BASE	19/04/2021	14/04/2022	-	14/04/2022	60.180	402.021	36.203	365.818	WCM	-	22.3	3270	11.890	2.030	-8.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW293	OFF BASE	14/04/2022	17/04/2023	-	17/04/2023	60.532	402.021	35.398	366.623	WCM	-	22.4	3363	11.970	1.910	38.200	Medium	Clear	No odour	No sheen	HydraSleeve™
MW293	OFF BASE	17/04/2023	9/04/2024	-	9/04/2024	60.36	402.021	37.126	364.895	WCM	-	23.1	3179	11.71	0.41	-111.3	Clear	Clear	No odour	No sheen	HydraSleeve™
MW294	OFF BASE	15/04/2021	15/04/2022	-	15/04/2022	18.415	403.780	7.726	396.054	OCA	-	19.7	2221	7.790	1.770	147.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW294	OFF BASE	15/04/2022	18/04/2023	-	18/04/2023	18.358	403.780	7.997	395.783	OCA	-	20.7	1656	7.530	1.700	21.900	Medium	Clear/ brownish	No odour	No sheen	HydraSleeve™
MW294	OFF BASE	18/04/2023	8/04/2024	-	8/04/2024	18.3	403.780	8.67	395.110	OCA	-	22.1	2270	7.39	0.01	-17	Clear	Clear	No odour	No sheen	HydraSleeve™. Well cover repair required.
MW295	OFF BASE	15/04/2021	13/04/2022	-	13/04/2022	-	402.837	-	-	WCM	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Gauging and field parameter data lost due to EDCA fault.
MW295	OFF BASE	13/04/2022	18/04/2023	-	18/04/2023	69.900	402.837	7.782	395.055	WCM	-	21.0	915	10.040	0.600	33.000	High	Clear/ brownish	Weak sulfuric odour	No sheen	HydraSleeve™
MW295	OFF BASE	18/04/2023	8/04/2024	-	8/04/2024	10.73	402.837	8.176	394.661	WCM	-	23.4	909	9.98	0.2	-44.4	Low	Clear	No odour	No sheen	HydraSleeve™
MW296	OFF BASE	-	-	-	-	Permission not granted	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not sampled as no access permission
MW296	OFF BASE	15/04/2021	-	-	-	-	399.155	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not sampled- stakeholder declined.
MW296	OFF BASE	15/04/2021	-	-	-	-	-	-	-	OCA	-	-	-	-	-	-	-	-	-	-	Not sampled as no access permission
MW297	OFF BASE	-	-	-	-	Permission not granted	-	-	-	WCM	-	-	-	-	-	-	-	-	-	-	Not sampled as no access permission
MW297	OFF BASE	15/04/2021	-	-	-	-	399.230	-	-	WCM	-	-	-	-	-	-	-	-	-	-	Not sampled- stakeholder declined.
MW297	OFF BASE	15/04/2021	-	-	-	-	-	-	-	WCM	-	-	-	-	-	-	-	-	-	-	Not sampled as no access permission

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW299	AFFF SETTLING TANK AND AFFF STORAGE TANK	17/04/2021	12/10/2021	-	12/10/2021	15.440	403.970	12.244	391.726	OCA	gravelly SAND	23.8	8647	6.770	0.540	17.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW299	AFFF SETTLING TANK AND AFFF STORAGE TANK	17/04/2021	17/04/2022	-	17/04/2022	15.450	403.970	12.106	391.864	OCA	gravelly SAND	23.8	5518	6.680	0.350	143.600	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW299	AFFF SETTLING TANK AND AFFF STORAGE TANK	17/04/2022	24/10/2022	-	24/10/2022	15.450	403.970	12.129	391.841	OCA	gravelly SAND	26.8	6628	6.760	1.040	91.900	Clear	Clear	No odour	No sheen	HydraSleeve™. Settled sediment.
MW299	AFFF SETTLING TANK AND AFFF STORAGE TANK	24/10/2022	12/04/2023	-	12/04/2023	15.448	403.970	12.195	391.775	OCA	gravelly SAND	21.8	3944	6.910	0.410	152.300	Medium	Clear	No odour	No sheen	HydraSleeve™
MW299	AFFF SETTLING TANK AND AFFF STORAGE TANK	12/04/2023	24/10/2023	-	24/10/2023	15.460	403.970	12.244	391.726	OCA	gravelly SAND	25.7	5148	6.770	1.300	90.000	Low	Clear	No odour	No sheen	HydraSleeve™.
MW299	AFFF SETTLING TANK AND AFFF STORAGE TANK	24/10/2023	2/04/2024	-	2/04/2024	15.48	403.970	12.268	391.702	OCA	gravelly SAND	23.5	5766	6.69	0.62	101.8	Low	Clear	No odour	No sheen	HydraSleeve™
MW299	AFFF SETTLING TANK AND AFFF STORAGE TANK	02/10/2024	10/10/2024	12	10/10/2024	12.11	403.97	12.28	391.69	OCA	gravelly SAND	21.9	5538	6.78	0.8	-76	Low	Clear	No odour	No sheen	HydraSleeve™.
MW300	AFFF SETTLING TANK AND AFFF STORAGE TANK	17/04/2021	12/10/2021	-	12/10/2021	16.430	403.715	14.657	389.058	OCA	silty CLAY	24.7	8986	7.380	0.810	32.300	Low	Clear	No odour	No sheen	HydraSleeve™.
MW300	AFFF SETTLING TANK AND AFFF STORAGE TANK	17/04/2021	17/04/2022	-	17/04/2022	16.460	403.715	13.534	390.181	OCA	silty CLAY	23.4	5337	6.800	0.530	139.500	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW300	AFFF SETTLING TANK AND AFFF STORAGE TANK	17/04/2022	24/10/2022	-	24/10/2022	16.460	403.715	13.010	390.705	OCA	silty CLAY	25.6	5686	6.800	3.490	105.900	Clear	Clear	No odour	No sheen	HydraSleeve™. Settled sediment.
MW300	AFFF SETTLING TANK AND AFFF STORAGE TANK	24/10/2022	12/04/2023	-	12/04/2023	16.392	403.715	12.945	390.770	OCA	silty CLAY	21.1	4701	6.800	0.490	141.200	Medium	Clear	No odour	No sheen	HydraSleeve™
MW300	AFFF SETTLING TANK AND AFFF STORAGE TANK	12/04/2023	24/10/2023	-	24/10/2023	16.370	403.715	13.049	390.666	OCA	silty CLAY	24.7	5636	6.670	1.330	123.700	Low	Clear	No odour	No sheen	HydraSleeve™.
MW300	AFFF SETTLING TANK AND AFFF STORAGE TANK	24/10/2023	2/04/2024	-	2/04/2024	16.34	403.715	13.213	390.502	OCA	silty CLAY	24.2	5446	6.73	1.32	111.5	High	Brown	No odour	No sheen	HydraSleeve™. New bolts required.
MW300	AFFF SETTLING TANK AND AFFF STORAGE TANK	02/10/2024	10/10/2024	15.0	10/10/2024	15.48	403.715	13.17	390.545	OCA	silty CLAY	22.0	4558	6.87	1.6	-55.8	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW562	HOT REFUEL AREA AND AFFF SETTLING TANK	19/04/2022	20/04/2022	-	20/04/2022	16.500	402.720	13.111	389.609	OCA	-	22.8	1871	7.210	0.460	174.200	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW562	HOT REFUEL AREA AND AFFF SETTLING TANK	26/10/2022	3/11/2022	-	3/11/2022	16.500	402.720	12.487	390.233	OCA	-	17.8	2102	7.120	2.580	88.800	Medium	Clear	No odour	No sheen	HydraSleeve™. Suspended and settled brown sediment.
MW562	HOT REFUEL AREA AND AFFF SETTLING TANK	3/11/2022	12/04/2023	-	12/04/2023	19.341	402.720	12.575	390.145	OCA	-	21.8	1425	7.180	0.890	89.400	High	Cloudy	No odour	No sheen	HydraSleeve™
MW562	HOT REFUEL AREA AND AFFF SETTLING TANK	12/04/2023	26/10/2023	-	26/10/2023	19.350	402.720	12.670	390.050	OCA	-	20.0	1516	7.130	0.920	25.300	Medium	Clear	No odour	No sheen	HydraSleeve™.
MW562	HOT REFUEL AREA AND AFFF SETTLING TANK	26/10/2023	4/04/2024	-	4/04/2024	19.33	402.720	12.807	389.913	OCA	-	22.6	1499	7.07	0.79	-73.5	Medium	Brown	No odour	No sheen	HydraSleeve™
MW562	HOT REFUEL AREA AND AFFF SETTLING TANK	02/10/2024	10/10/2024	15.5	10/10/2024	16.68	402.72	12.73	389.99	OCA	-	20.7	1382	7.16	5.2	-50.9	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW563	HOT REFUEL AREA AND AFFF SETTLING TANK	19/04/2022	20/04/2022	-	20/04/2022	19.490	402.900	13.181	389.719	OCA	-	22.2	1481	7.460	0.420	168.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW563	HOT REFUEL AREA AND AFFF SETTLING TANK	26/10/2022	3/11/2022	-	3/11/2022	19.490	402.900	12.559	390.341	OCA	-	18.9	1891	7.330	1.010	90.300	Clear	Clear	No odour	No sheen	HydraSleeve™.
MW563	HOT REFUEL AREA AND AFFF SETTLING TANK	3/11/2022	12/04/2023	-	12/04/2023	16.529	402.900	12.523	390.377	OCA	-	19.4	1592	7.100	4.370	106.300	Medium	Clear	No odour	No sheen	HydraSleeve™
MW563	HOT REFUEL AREA AND AFFF SETTLING TANK	12/04/2023	26/10/2023	-	26/10/2023	16.490	402.900	12.659	390.241	OCA	-	22.5	1670	7.070	5.310	-2.000	Medium	Cloudy	No odour	No sheen	HydraSleeve™.
MW563	HOT REFUEL AREA AND AFFF SETTLING TANK	26/10/2023	4/04/2024	-	4/04/2024	16.48	402.900	12.756	390.144	OCA	-	22.3	1534	7	4.71	19	Clear	Clear	No odour	No sheen	HydraSleeve™
MW563	HOT REFUEL AREA AND AFFF SETTLING TANK	02/10/2024	10/10/2024	18.5	10/10/2024	19.63	402.9	12.78	390.12	OCA	-	21.4	1360	7.18	1.3	-94.9	Low-Moderate	Clear on top,orange on bottom	No odour	No sheen	HydraSleeve™.
MW567	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	42.8	10/10/2024	42.93	402.12	39.22	362.9	TZ	-	-	-	-	-	-	-	Dry - no sample	-	-	No sample collected - well effectively dry.
MW568	WEST OF SOURCE AREAS	30/09/2024	8/10/2024	45.2	8/10/2024	46.39	402.84	17.76	385.08	TZ	-	20.9	1099	9.8	2.1	-300	Low	Clear	No odour	No sheen	HydraSleeve™.

Well ID	On-Base source area	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of Hydra-Sleeve™ deploy-ment (mbgl)	Gauging Date	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Ground-water Eleva-tion (mAHD)	Aquifer	Screened Lithology	Temp (°C) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	DO (mg/L) *Field measure-ment*	Redox (mV) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW569	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	29.2	10/10/2024	31.11	402.5	13.82	388.68	OCA	-	21.9	1596	7.51	1	-191.6	Low-Moderate	Clear on top, brown on bottom	No odour	No sheen	HydraSleeve™.
MW570_D	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	28.45	10/10/2024	29.39	402.04	13.86	388.18	OCA	-	21.9	1811	7.54	2.9	9.1	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW570_S	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	20.34	10/10/2024	21.15	402.04	13.85	388.19	OCA	-	22.0	1629	7.64	3.2	-133.6	Low	Clear on top, cloudy on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW571_D	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	30.13	10/10/2024	30.87	402.23	13.65	388.58	OCA	-	21.5	1529	7.49	5.3	-95	Low	Clear	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW571_S	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	23.6	10/10/2024	24.51	402.23	13.64	388.59	OCA	gravelly clayey SAND	22.1	1972	7.32	1.9	-130.3	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW572_D	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	30.45	10/10/2024	31.2	402.51	13.79	388.72	OCA	-	22.0	1445	7.21	0.7	24.8	Low	Clear on top, pale yellow on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW572_S	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	25.9	10/10/2024	25.93	402.51	13.78	388.73	OCA	-	22.1	1533	7.22	3	-118.6	Low-Moderate	Clear on top, pale brown for half, brown for bottom 5 cm	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW573_D	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	29.25	10/10/2024	30.04	402.62	13.9	388.72	OCA	-	20.5	1555	7.04	1.5	71.9	Low	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW573_S	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	23.89	10/10/2024	24.77	402.62	13.86	388.76	OCA	-	21.4	1559	7.06	3.7	-156.1	Low	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW574_D	WEST OF SOURCE AREAS	8/10/2024	8/10/2024	22.84	8/10/2024	23.12	402.89	14.04	388.85	OCA	-	21.6	1494	7.51	1.4	-355.7	Low	Clear	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW574_S	WEST OF SOURCE AREAS	8/10/2024	8/10/2024	23.65	8/10/2024	23.74	402.89	14.07	388.82	OCA	-	22.0	1358	7.52	2	-324.5	Moderate	Pale brown	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW575	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	19.73	10/10/2024	20.73	402.58	14.85	387.73	OCA	-	21.6	1715	7.17	1	-222.1	Low	Clear/cloudy	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW576	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	18.8	10/10/2024	19.55	402.31	13.73	388.58	OCA	-	21.9	2211	7.63	1.9	-148.6	Low-Moderate	Clear, 4cm of brown sediment on bottom	No odour	No sheen	HydraSleeve™.
MW577	WEST OF SOURCE AREAS	30/09/2024	10/10/2024	17.15	10/10/2024	18	402.7	13.91	388.79	OCA	sandy CLAY	21.9	2194	7.48	2.1	-135.2	Moderate	Clear/cloudy on top, 4 cm brown sediment on bottom	No odour	No sheen	HydraSleeve™.
MW578	WEST OF SOURCE AREAS	30/09/2024	8/10/2024	20.34	8/10/2024	23.12	402.87	14.03	388.84	OCA	-	22.9	1966	7.04	3.8	-163	Low-Moderate	Clear top, orange bottom	No odour	No sheen	HydraSleeve™.

OCA = Oakey Creek Alluvium, MRV = Main Range Volcanics, WCM = Walloon Coal Measures, TZ = Transition Zone between OCA and WCM

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW003	OCA	18 Oct 2018	AACO-GW03-181017	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	24 Oct 2019	0207_MW003_191024	OMP Oct 2019	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	26 Feb 2020	0207_QC1MW_200226	OMP Apr 2020	0.14	<0.01	-	0.03[#1]	***0.59*** [#1]	0.04	0.11[#1]	<0.01	**0.52**[#1]	<0.05	<0.01	<0.01	0.03[#1]	0.12[#1]	<0.01	0.03[#1]	<0.01	<0.01	<0.01	<0.01	-
MW003	OCA	26 Feb 2020	0207_OMW03_200226	OMP Apr 2020	0.16	<0.01	-	0.03[#1]	***0.62*** [#1]	0.04	0.13[#1]	<0.01	**0.54**[#1]	<0.05	<0.01	<0.01	0.02[#1]	0.12[#1]	<0.01	0.04[#1]	<0.01	<0.01	<0.01	<0.01	-
MW003	OCA	24 Mar 2020	0207_QC115_200324	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	24 Mar 2020	0207_MW003_200324	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	24 Mar 2020	0207_QC215_200324	OMP Apr 2020	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
MW003	OCA	21 Oct 2020	0207_MW003_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	13 Apr 2021	0207_MW003_210413	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	14 Oct 2021	0207_MW003_211014	OMP Oct 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	13 Apr 2022	0207_MW003_220413	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	02 Nov 2022	0207_QC267_221102	OMP Oct 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	02 Nov 2022	0207_QC167_221102	OMP Oct 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	02 Nov 2022	0207_MW003_221102	OMP Oct 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	18 Apr 2023	0207_MW003_230418	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	25 Oct 2023	0207_MW003_231025	OMP Oct 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	08 Apr 2024	0207_MW003_240408	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	OCA	09 Oct 2024	0207_MW003_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW019	OCA	22 Nov 2018	AACO_GW19_181122	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	22 Nov 2018	AACO_QC200_181122	OMP Oct 2018	<0.01	<0.01	-	<0.01	<0.02	-	<0.01	<0.01	0.043	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW019	OCA	22 Nov 2018	AACO_QC100_181122	OMP Oct 2018	<0.02	<0.02	-	<0.02	***0.01***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	24 Oct 2019	0207_MW019_191024	OMP Oct 2019	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	26 Mar 2020	0207_MW019_200326	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	21 Oct 2020	0207_MW019_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	13 Apr 2021	0207_MW019_210413	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	14 Oct 2021	0207_MW019_211014	OMP Oct 2021	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	12 Apr 2022	0207_MW019_220412	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	27 Oct 2022	0207_QC266_221027	OMP Oct 2022	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	27 Oct 2022	0207_QC166_221027	OMP Oct 2022	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	27 Oct 2022	0207_MW019_221027	OMP Oct 2022	<0.02	<0.02	-	<0.02	***0.05***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	17 Apr 2023	0207_MW019_230417	OMP Apr 2023	<0.02	<0.02	-	<0.02	***0.05***	-	<0.02	-	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	25 Oct 2023	0207_MW019_231025	OMP Oct 2023	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	09 Apr 2024	0207_MW019_240409	OMP Apr 2024	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	OCA	09 Oct 2024	0207_MW019_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW021	OCA	18 Oct 2018	AACO-GW21-181018	OMP Oct 2018	0.18	<0.02	-	0.14	***2.46***	-	0.15	-	**1.26**	<0.1	<0.02	<0.02	0.03	0.19	<0.02	0.08	0.04	<0.05	<0.02	<0.02	-
MW021	OCA	18 Oct 2018	AACO-QC100-181018	OMP Oct 2018	0.16	<0.02	-	0.14	***2.58***	-	0.12	-	**1.32**	<0.1	<0.02	<0.02	0.03	0.22	<0.02	0.08	0.04	<0.05	<0.02	<0.02	-
MW021	OCA	18 Oct 2018	AACO_QC200_181018	OMP Oct 2018	0.16	<0.01	-	0.12	***3.8***	-	0.15	<0.01	**1.4**	<0.05	<0.01	<0.01	0.034	0.22	<0.01	0.08	0.046	<0.02	<0.02	<0.01	<0.02
MW021	OCA	27 Mar 2020	0207_MW021_200327	OMP Apr 2020	0.21	<0.02	-	0.25	***4.44***	-	0.24	-	**1.87**	<0.1	<0.02	<0.02	0.06	0.27	<0.02	0.11	0.06	<0.05	<0.02	<0.02	-
MW021	OCA	19 Apr 2021	0207_MW021_210419	OMP Apr 2021	0.18	<0.02	-	0.27	***4.48***	-	0.23	-	**1.62**	<0.1	<0.02	<0.02	0.05	0.28	<0.02	0.12	0.06	<0.05	<0.02	<0.02	-
MW021	OCA	12 Apr 2022	0207_MW021_220412	OMP Apr 2022	0.23	<0.02	-	0.27	***4.42***	-	0.24	-	**1.91**	<0.1	<0.02	<0.02	0.05	0.29	<0.02	0.13	0.05	<0.05	<0.02	<0.02	-
MW021	OCA	17 Apr 2023	0207_MW021_230417	OMP Apr 2023	0.26	<0.02	-	0.25	***4.93***	-	0.24	-	**1.92**	<0.1	<0.02	<0.02	0.06	0.30	<0.02	0.12	0.07	<0.05	<0.02	<0.02	-
MW021	OCA	09 Apr 2024	0207_MW021_240409	OMP Apr 2024	0.19	<0.02	-	0.20	***4.45***	-	0.19	-	**1.71**	<0.1	<0.02	<0.02	0.05	0.27	<0.02	0.10	0.06	<0.05	<0.02	<0.02	-
MW038	OCA	19 Oct 2018	AACO-GW38-181019	OMP Oct 2018	0.04	<0.02	-	<0.02	***0.39***	-	0.03	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	24 Oct 2019	0207_MW038_191024	OMP Oct 2019	0.03	<0.02	-	<0.02	***0.28***	-	0.03	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	26 Mar 2020	0207_MW038_200326	OMP Apr 2020	0.04	<0.02	-	0.03	***0.59***	-	0.04	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	21 Oct 2020	0207_MW038_201021	OMP Oct 2020	0.03	<0.02	-	<0.02	***0.38***	-	0.03	-	**0.18**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	15 Apr 2021	0207_MW038_210415	OMP Apr 2021	0.04	<0.02	-	0.02	***0.50***	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	15 Oct 2021	0207_MW038_211015	OMP Oct 2021	0.05	<0.02	-	0.03	***0.62***	-	0.05	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	03 Nov 2022	0207_MW038_221103	OMP Oct 2022	0.06	<0.02	-	0.03	***0.62***	-	0.05	-	**0.31**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	13 Apr 2023	0207_MW038_230413	OMP Apr 2023	0.07	<0.02	-	0.03	***0.71***	-	0.06	-	**0.36**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	27 Oct 2023	0207_MW038_231027	OMP Oct 2023	0.06	<0.02	-	0.03	***0.84***	-	0.05	-	**0.40**	<0.1	<0.02	<0.02	0.02	0.07	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	08 Apr 2024	0207_MW038_240408	OMP Apr 2024	0.04	<0.02	-	<0.02	***0.58***	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW038	OCA	01 Oct 2024	0207_QC101_241001	OMP Oct 2024	0.05	<0.02	<0.02	0.02	***0.66***	<0.02	0.05	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW038	OCA	01 Oct 2024	0207_MW038_241001	OMP Oct 2024	0.05	<0.02	<0.02	0.02	***0.70***	<0.02	0.05	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05
MW038	OCA	01 Oct 2024	0207_QC201_241001	OMP Oct 2024	0.06	<0.02	<0.02	0.03	***0.71***	<0.02	0.05	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05
MW056	OCA	17 Oct 2018	AACO-GW56-181017	OMP Oct 2018	0.04	<0.02	-	<0.02	*0.06*	-	0.02	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW056	OCA	23 Oct 2020	0207_MW056_201023	OMP Oct 2020	0.03	<0.02	-	<0.02	*0.06*	-	0.03	-	**0.25**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.01	0.02	<0.05	<0.02	<0.02	-
MW056	OCA	13 Apr 2021	0207_MW056_210413	OMP Apr 2021	0.05	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW056	OCA	14 Oct 2021	0207_MW056_211014	OMP Oct 2021	0.05	<0.02	-	<0.02	***0.11***	-	0.03	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW056	OCA	12 Apr 2022	0207_MW056_220412	OMP Apr 2022	0.07	<0.02	-	<0.02	*0.07*	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW056	OCA	27 Oct 2022	0207_MW056_221027	OMP Oct 2022	0.05	<0.02	-	<0.02	***0.09***	-	0.04	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	0.03	<0.05	<0.02	<0.02	-
MW056	OCA	17 Apr 2023	0207_MW056_230417	OMP Apr 2023	0.04	<0.02	-	<0.02	***0.11***	-	0.04	-	**0.29**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	0.03	<0.05	<0.02	<0.02	-
MW056	OCA	25 Oct 2023	0207_MW056_231025	OMP Oct 2023	0.04	<0.02	-	<0.02	***0.10***	-	0.02	-	**0.25**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW056	OCA	09 Apr 2024	0207_MW056_240409	OMP Apr 2024	0.03	<0.02	-	<0.02	*0.07*	-	<0.02	-	**0.16**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW113	OCA	27 Mar 2020	0207_MW113_200327	OMP Apr 2020	0.06	<0.02	-	0.02	***0.26***	-	0.06	-	**0.34**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW113	OCA	22 May 2020	0207_MW113_200522	OMP Apr 2020	0.06	<0.02	-	0.02	***0.20***	-	0.04	-	**0.31**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW113	OCA	15 Apr 2021	0207_MW113_210415	OMP Apr 2021	<0.10[#2]	<0.02	-	<0.02	***0.15***	-	0.05	-	**0.30**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW113	OCA	12 Apr 2022	0207_MW113_220412	OMP Apr 2022	0.04	<0.02	-	<0.02	***0.13***	-	0.05	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW113	OCA	20 Apr 2023	0207_MW113_230420	OMP Apr 2023	0.03	<0.02	-	<0.02	***0.14***	-	0.03	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW113	OCA	10 Apr 2024	0207_MW113_240410	OMP Apr 2024	0.02	<0.02	-	<0.02	***0.11***	-	0.02	-	**0.16**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW114	OCA	27 Mar 2020	0207_MW114_200327	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW114	OCA	28 Apr 2021	0207_MW114_210428	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW114	OCA	20 Apr 2022	0207_MW114_220420	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW114	OCA	20 Apr 2023	0207_QC113_230420	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW114	OCA	20 Apr 2023	0207_MW114_230420	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW114	OCA	20 Apr 2023	0207_QC213_230420	OMP Apr 2023	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
MW114	OCA	10 Apr 2024	0207_MW114_240410	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW118	OCA	27 Mar 2020	0207_MW118_200327	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW118	OCA	28 Apr 2021	0207_MW118_210428	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW118	OCA	20 Apr 2022	0207_MW118_220420	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW118	OCA	20 Apr 2023	0207_QC114_230420	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW118	OCA	20 Apr 2023	0207_MW118_230420	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW118	OCA	20 Apr 2023	0207_QC214_230420	OMP Apr 2023	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
MW118	OCA	10 Apr 2024	0207_MW118_240410	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW122	OCA	27 Mar 2020	0207_MW122_200327	OMP Apr 2020	0.16	<0.02	-	0.14	***1.69***	-	0.18	-	**1.61**	<0.10	<0.02	<0.02	0.06	0.29	<0.02	0.10	0.08	<0.05	<0.02	<0.02	-
MW122	OCA	28 Apr 2021	0207_MW122_210428	OMP Apr 2021	0.17	<0.02	-	0.06	***1.04***	-	0.18	-	**1.02**	<0.1	<0.02	<0.02	0.05	0.30	<0.02	0.06	0.08	<0.05	<0.02	<0.02	-
MW122	OCA	20 Apr 2022	0207_MW122_220420	OMP Apr 2022	0.17	<0.02	-	0.05	***0.97***	-	0.18	-	**0.99**	<0.1	<0.02	<0.02	0.04	0.27	<0.02	0.07	0.07	<0.05	<0.02	<0.02	-
MW122	OCA	20 Apr 2023	0207_MW122_230420	OMP Apr 2023	0.26	<0.02	-	0.17	***4.18***	-	0.25	-	**1.99**	<0.1	<0.02	<0.02	0.08	0.49	<0.02	0.15	0.14	<0.05	<0.02	<0.02	-
MW122	OCA	10 Apr 2024	0207_MW122_240410	OMP Apr 2024	0.18	<0.02	-	0.04	***0.70***	-	0.17	-	**1.08**	<0.1	<0.02	<0.02	0.05	0.32	<0.02	0.06	0.10	<0.05	<0.02	<0.02	-
MW132	OCA	27 Mar 2020	0207_MW132_200327	OMP Apr 2020	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW132	OCA	19 Apr 2021	0207_MW132_210419	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW132	OCA	12 Apr 2022	0207_MW132_220412	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.11***	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW132	OCA	03 May 2024	0207_MW132_240503	OMP Apr 2024	0.72	<0.02	-	0.27	***5.20***	-	0.82	-	**6.24**	0.3	<0.02	<0.02	0.24	1.62	<0.02	0.42	0.37	<0.05	<0.02	<0.02	-
MW134	OCA	18 Oct 2018	AACO-RN83362-181018	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	24 Oct 2019	0207_MW134_191024	OMP Oct 2019	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	26 Mar 2020	0207_MW134_200326	OMP Apr 2020	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	21 Oct 2020	0207_MW134_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	19 Apr 2021	0207_MW134_210419	OMP Apr 2021	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	14 Oct 2021	0207_MW134_211014	OMP Oct 2021	0.02	<0.02	-	<0.02	***0.14***	-	0.02	-	**0.13**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	14 Apr 2022	0207_MW134_220414	OMP Apr 2022	0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	02 Nov 2022	0207_MW134_221102	OMP Oct 2022	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	19 Apr 2023	0207_MW134_230419	OMP Apr 2023	0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	25 Oct 2023	0207_MW134_231025	OMP Oct 2023	<0.02	<0.02	-	<0.02	***0.18***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	10 Apr 2024	0207_MW134_240410	OMP Apr 2024	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	OCA	09 Oct 2024	0207_MW134_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW139	OCA	10 Apr 2024	0207_MW139_240410	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW147	OCA	12 Jul 2017	AACO-RN107547-170712	OMP July 2017	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	22 Nov 2018	AACO_RN107547_181122	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	24 Oct 2019	0207_MW147_191024	OMP Oct 2019	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	27 Mar 2020	0207_MW147_200327	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	21 Oct 2020	0207_MW147_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	13 Apr 2021	0207_MW147_210413	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	14 Oct 2021	0207_MW147_211014	OMP Oct 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	0.03	<0.02	<0.02	0.01	0.03	<0.05	<0.02	<0.02	-
MW147	OCA	12 Apr 2022	0207_MW147_220412	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	17 Apr 2023	0207_MW147_230417	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	25 Oct 2023	0207_MW147_231025	OMP Oct 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	09 Apr 2024	0207_MW147_240409	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	OCA	11 Oct 2024	0207_MW147_241011	OMP Oct 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW149	OCA	30 Mar 2020	0207_MW149_200330	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW149	OCA	19 Apr 2021	0207_MW149_210419	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW149	OCA	12 Apr 2022	0207_MW149_220412	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW149	OCA	20 Apr 2023	0207_MW149_230420	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW149	OCA	09 Apr 2024	0207_MW149_240409	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	18 Oct 2018	AACO-RN86696-181017	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	24 Oct 2019	0207_MW151_191024	OMP Oct 2019	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	27 Mar 2020	0207_MW151_200327	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	21 Oct 2020	0207_MW151_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	13 Apr 2021	0207_MW151_210413	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	14 Oct 2021	0207_MW151_211014	OMP Oct 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	14 Apr 2022	0207_MW151_220414	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	17 Apr 2023	0207_MW151_230417	OMP Apr 2023	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	25 Oct 2023	0207_MW151_231025	OMP Oct 2023	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	09 Apr 2024	0207_MW151_240409	OMP Apr 2024	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	OCA	11 Oct 2024	0207_MW151_241011	OMP Oct 2024	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW157	OCA	26 Mar 2020	0207_MW157_200326	OMP Apr 2020	0.65	<0.04[#2]	-	0.44	***7.40***	-	0.60	-	**3.88**	<0.2[#2]	<0.04[#2]	<0.04[#2]	0.14	0.87	<0.04[#2]	0.28	0.20	<0.09[#2]	<0.04[#2]	<0.04[#2]	-
MW157	OCA	28 Apr 2021	0207_MW157_210428	OMP Apr 2021	0.56	<0.02	-	0.37	***7.68***	-	0.56	-	**3.39**	0.1	<0.02	<0.02	0.14	0.86	<0.02	0.25	0.19	<0.05	<0.02	<0.02	-
MW157	OCA	20 Apr 2022	0207_MW157_220420	OMP Apr 2022	0.58	<0.02	-	0.46	***6.54***	-	0.67	-	**3.82**	0.1	<0.02	<0.02	0.13	0.85	<0.02	0.30	0.18	<0.05	<0.02	<0.02	-
MW157	OCA	20 Apr 2023	0207_MW157_230420	OMP Apr 2023	0.58	<0.02	-	0.35	***5.69***	-	0.57	-	**3.24**	0.1	<0.02	<0.02	0.14	0.85	<0.02	0.24	0.22	<0.05	<0.02	<0.02	-
MW157	OCA	10 Apr 2024	0207_MW157_240410	OMP Apr 2024	0.36	<0.02	-	0.21	***3.41***	-	0.34	-	**2.09**	0.1	<0.02	<0.02	0.09	0.61	<0.02	0.15	0.15	<0.05	<0.02	<0.02	-
MW167	OCA	22 Oct 2018	AACO-MWA1-B-181022	OMP Oct 2018	0.86	<0.02	-	0.43	***9.40***	-	0.87	-	**4.48**	0.3	<0.02	<0.02	0.29	1.75	<0.02	0.55	0.37	<0.05	<0.02	<0.02	-
MW167	OCA	10 Jul 2019	0207_MWA1-B_190710	OMP July 2019	0.676	0.0208	-	0.503	***10.2***	-	0.708	-	**3.11**	0.063	0.0008	<0.0005	0.205	1.21	0.0033	0.412	0.262	<0.0005	<0.0005	0.0007	-
MW167	OCA	21 Oct 2019	0207_MW167_191021	OMP Oct 2019	0.76	<0.02	-	0.31	***6.86***	-	0.69	-	**3.67**	0.2	<0.02	<0.02	0.25	1.54	<0.02	0.43	0.32	<0.05	<0.02	<0.02	-
MW167	OCA	30 Oct 2019	0207_MWA1-B_191030	OMP Oct 2019	0.857	0.0295	-	0.440	***9.06***	-	0.614	-	**3.61**	0.138	0.0007	<0.0005	0.209	1.57	0.0035	0.473	0.322	<0.0005	<0.0005	<0.0005	-
MW167	OCA	05 Mar 2020	0207_MWA1-B_200305	OMP Apr 2020	0.928	<0.0016[#2]	-	0.450	***8.69***	-	0.878	-	**3.40**	0.074	<0.0016[#2]	<0.0016[#2]	0.268	1.36	0.0046	0.557	0.334	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW167	OCA	25 Mar 2020	0207_MW167_200325	OMP Apr 2020	1.05	<0.09[#2]	-	0.48	***9.18***	-	0.80	-	**4.34**	<0.4[#2]	<0.09[#2]	<0.09[#2]	0.24	1.36	<0.09[#2]	0.46	0.29	<0.23[#2]	<0.09[#2]	<0.09[#2]	-
MW167	OCA	07 Apr 2020	0207_MWA1-B_200407	OMP Apr 2020	0.71	<0.02	-	0.39	***9.65***	-	0.71	-	**3.30**	0.24	<0.02	<0.02	0.24	1.52	<0.02	0.39	0.34	<0.05	<0.02	<0.02	-
MW167	OCA	19 Oct 2020	0207_MW167_201019	OMP Oct 2020	0.85	<0.02	-	0.38	***8.45***	-	0.70	-	**3.68**	0.28	<0.02	<0.02	0.28	1.74	<0.02	0.52	0.40	<0.05	<0.02	<0.02	-
MW167	OCA	23 Mar 2021	0207_MWA1-B_210323	OMP Apr 2021	0.88	<0.10[#2]	-	0.42	***11.2***	-	0.71	-	**4.32**	<0.5[#2]	<0.10[#2]	<0.10[#2]	0.34	1.73	<0.10[#2]	**0.59**	0.46	<0.24[#2]	<0.10[#2]	<0.10[#2]	-
MW167	OCA	17 Apr 2021	0207_MW167_210417	OMP Apr 2021	0.62	<0.02	-	0.26	***5.50***	-	0.54	-	**2.73**	0.22	<0.02	<0.02	0.22	1.22	<0.02	0.36	0.29	<0.05	<0.02	<0.02	-
MW167	OCA	11 Oct 2021	0207_MW167_211011	OMP Oct 2021	0.70	<0.05[#2]	-	0.29	***5.01***	-	0.63	-	**3.03**	0.3	<0.05[#2]	<0.05[#2]	0.24	1.43	<0.05[#2]	0.43	0.30	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW167	OCA	08 Feb 2022	0207_MW167_220208	OMR Feb 2022	0.76	<0.05[#2]	-	0.42	***11.2***	-	0.79	-	**3.88**	0.2	<0.05[#2]	<0.05[#2]	0.31	1.67	<0.05[#2]	**0.59**	0.37	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW167	OCA	17 Apr 2022	0207_MW167_220417	OMP Apr 2022	0.55	<0.02	-	0.22	***4.34***	-	0.46	-	**2.48**	0.1	<0.02	<0.02	0.17	1.18	<0.02	0.36	0.26	<0.06[#2]	<0.02	<0.02	-
MW167	OCA	27 Oct 2022	0207_MW167_221027	OMP Oct 2022	0.46	<0.02	-	0.20	***5.85***	-	0.42	-	**2.32**	0.1	<0.02	<0.02	0.15	0.98	<0.02	0.28	0.22	<0.05	<0.02	<0.02	-
MW167	OCA	12 Apr 2023	0207_QC203_230412	OMP Apr 2023	0.57	<0.01	-	0.2	***3.2***	<0.01	0.52	<0.01	**2.2**	0.21	<0.01	<0.01	0.16	0.99	<0.01	0.31	0.24	<0.02	<0.02	<0.01	<0.02
MW167	OCA	12 Apr 2023	0207_MW167_230412	OMP Apr 2023	0.77	<0.02	-	0.39	***5.47***	-	0.68	-	**3.15**	0.2	<0.02	<0.02	0.23	1.38	<0.02	0.46	0.32	<0.05	<0.02	<0.02	-
MW167	OCA	12 Apr 2023	0207_QC103_230412	OMP Apr 2023	0.85	<0.02	-	0.40	***6.01***	-	0.79	-	**3.64**	0.3	<0.02	<0.02	0.26	1.44	<0.02	0.46	0.35	<0.06[#2]	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW167	OCA	24 Oct 2023	0207_MW167_231024	OMP Oct 2023	0.74	<0.02	-	0.29	***4.76***	-	0.60	-	**3.21**	0.2	<0.02	<0.02	0.18	0.99	<0.02	0.41	0.33	<0.05	<0.02	<0.02	-
MW167	OCA	02 Apr 2024	0207_MW167_240402	OMP Apr 2024	0.46	<0.02	-	0.21	***4.51***	-	0.41	-	**2.20**	0.2	<0.02	<0.02	0.15	0.90	<0.02	0.29	0.23	<0.05	<0.02	<0.02	-
MW167	OCA	09 Oct 2024	0207_MW167_241009	OMP Oct 2024	0.54	<0.02	-	0.26	***4.86***	-	0.54	-	**2.51**	0.2	<0.02	<0.02	0.17	1.21	<0.02	0.34	0.33	<0.05	<0.02	<0.02	<0.05
MW172	OCA	24 Oct 2018	AACO-MWA2-D-181024	OMP Oct 2018	1.17	<0.02	-	0.70	***25.0***	-	1.18	-	**5.50**	0.6	0.20	<0.02	1.30	2.57	0.17	**1.55**	1.23	<0.05	<0.02	0.02	-
MW172	OCA	23 Oct 2019	0207_MW172_191023	OMP Oct 2019	0.42	<0.02	-	0.16	***5.34***	-	0.40	-	**2.18**	0.5	0.08	<0.02	1.10	1.60	0.15	**0.84**	1.47	<0.05	<0.02	<0.02	-
MW172	OCA	30 Mar 2020	0207_MW172_200330	OMP Apr 2020	0.48	<0.02	-	0.24	***6.12***	-	0.46	-	**2.38**	0.9	0.15	<0.02	1.65	1.83	0.24	**1.15**	2.21	<0.05	<0.02	0.02	-
MW172	OCA	20 Oct 2020	0207_MW172_201020	OMP Oct 2020	0.33	<0.02	-	0.15	***3.96***	-	0.34	-	**2.05**	0.5	0.07	<0.02	1.09	1.36	0.14	**0.64**	1.47	<0.05	<0.02	<0.02	-
MW172	OCA	14 Apr 2021	0207_QC245_210414	OMP Apr 2021	0.32	<0.01	-	0.076	***2.6***	-	0.27	<0.01	**1.6**	0.54	0.046	<0.01	1.3	1.1	0.12	0.56	1.6	<0.02	<0.02	<0.01	<0.02
MW172	OCA	14 Apr 2021	0207_QC145_210414	OMP Apr 2021	0.45	<0.02	-	0.10	***2.79***	-	0.33	-	**1.77**	0.56	0.07	<0.02	1.54	1.37	0.13	**0.72**	2.02	<0.05	<0.02	<0.02	-
MW172	OCA	14 Apr 2021	0207_MW172_210414	OMP Apr 2021	0.30	<0.02	-	0.09	***3.63***	-	0.30	-	**1.71**	0.6	0.08	<0.02	1.42	1.18	0.14	**0.59**	1.83	<0.05	<0.02	<0.02	-
MW172	OCA	13 Oct 2021	0207_MW172_211013	OMP Oct 2021	0.22	<0.02	-	0.09	***2.50***	-	0.23	-	**1.20**	0.4	0.04	<0.02	0.66	0.79	0.08	0.36	1.06	<0.05	<0.02	<0.02	-
MW172	OCA	17 Apr 2022	0207_MW172_220417	OMP Apr 2022	1.03	<0.05[#2]	-	0.56	***22.1***	-	0.91	-	**4.61**	0.9	0.08	<0.05[#2]	1.70	3.99	0.13	**1.88**	2.34	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW172	OCA	26 Oct 2022	0207_QC265_221026	OMP Oct 2022	0.92	0.06	-	0.50	***17.2***	-	0.98	-	**4.90**	1.0	0.11	<0.02	1.69	3.21	0.19	**1.74**	3.37	<0.05	<0.02	0.03	-
MW172	OCA	26 Oct 2022	0207_QC165_221026	OMP Oct 2022	1.01	<0.02	-	0.45	***17.2***	-	0.85	-	**4.41**	1.0	0.08	<0.02	1.93	3.76	0.17	**1.81**	3.33	<0.06[#2]	<0.02	<0.02	-
MW172	OCA	26 Oct 2022	0207_MW172_221026	OMP Oct 2022	1.15	<0.10[#2]	-	0.60	***18.4***	-	1.02	-	**5.72**	1.3	<0.10[#2]	<0.10[#2]	2.03	4.28	0.16	**1.80**	3.61	<0.25[#2]	<0.10[#2]	<0.10[#2]	-
MW172	OCA	12 Apr 2023	0207_MW172_230412	OMP Apr 2023	1.13	<0.02	-	0.44	***13.4***	-	0.89	-	**4.45**	1.1	0.07	<0.02	1.72	3.07	0.16	**1.41**	4.06	<0.06[#2]	<0.02	<0.02	-
MW172	OCA	24 Oct 2023	0207_MW172_231024	OMP Oct 2023	0.94	<0.02	-	0.39	***14.0***	-	0.87	-	**4.55**	1.2	0.08	<0.02	1.33	2.20	0.13	**1.25**	5.53	<0.05	<0.02	<0.02	-
MW172	OCA	02 Apr 2024	0207_MW172_240402	OMP Apr 2024	0.46	<0.02	-	0.18	***6.83***	-	0.45	-	**2.68**	0.7	0.03	<0.02	0.80	1.44	0.08	**0.62**	3.07	<0.05	<0.02	<0.02	-
MW172	OCA	10 Oct 2024	0207_MW172_241010	OMP Oct 2024	0.56	<0.05[#2]	-	0.20	***5.56***	-	0.57	-	**3.07**	1.0	<0.05[#2]	<0.05[#2]	0.86	1.85	0.07	**0.66**	4.79	<0.12[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]
MW173	OCA	25 Oct 2018	AACO-MWA2-E-181025	OMP Oct 2018	0.32	<0.02	-	0.19	***2.89***	-	0.33	-	**2.98**	0.3	<0.02	<0.02	0.58	1.40	0.15	**0.62**	1.09	<0.05	<0.02	<0.02	-
MW173	OCA	23 Oct 2019	0207_MW173_191023	OMP Oct 2019	0.39	<0.02	-	0.23	***2.98***	-	0.41	-	**4.05**	0.4	0.03	<0.02	0.83	1.74	0.20	**0.84**	1.46	<0.05	<0.02	<0.02	-
MW173	OCA	26 Mar 2020	0207_QC221_200326	OMP Apr 2020	0.35	<0.01	-	0.16	***2.3***	-	0.32	<0.01	**2.6**	0.43	<0.01	<0.01	0.71	1.5	0.17	**0.73**	1.3	<0.02	<0.02	<0.01	<0.02
MW173	OCA	26 Mar 2020	0207_MW173_200326	OMP Apr 2020	0.32	<0.03[#2]	-	0.21	***2.88***	-	0.39	-	**3.04**	0.2	<0.03[#2]	<0.03[#2]	0.66	1.44	0.14	**0.70**	1.18	<0.08[#2]	<0.03[#2]	<0.03[#2]	-
MW173	OCA	26 Mar 2020	0207_QC121_200326	OMP Apr 2020	0.35	<0.03[#2]	-	0.21	***2.97***	-	0.43	-	**3.20**	0.2	<0.03[#2]	<0.03[#2]	0.72	1.50	0.14	**0.70**	1.24	<0.08[#2]	<0.03[#2]	<0.03[#2]	-
MW173	OCA	20 Oct 2020	0207_QC232_201020	OMP Oct 2020	0.23	<0.01	-	0.1	***1.6***	-	0.21	<0.01	**2.3**	0.31	0.012	<0.01	0.54	0.96	0.099	0.51	0.99	<0.02	<0.02	<0.01	<0.02
MW173	OCA	20 Oct 2020	0207_QC132_201020	OMP Oct 2020	0.32	<0.02	-	0.17	***1.85***	-	0.31	-	**2.90**	<0.35[#2]	<0.02	<0.02	0.61	1.22	0.12	**0.57**	<0.98[#2]	<0.05	<0.02	<0.02	-
MW173	OCA	20 Oct 2020	0207_MW173_201020	OMP Oct 2020	0.29	<0.02	-	0.18	***2.27***	-	0.29	-	**2.67**	0.3	<0.02	<0.02	0.58	1.28	0.12	0.56	0.97	<0.05	<0.02	<0.02	-
MW173	OCA	14 Apr 2021	0207_MW173_210414	OMP Apr 2021	0.22	<0.02	-	0.14	***2.01***	-	0.25	-	**2.32**	0.3	<0.02	<0.02	0.50	0.93	0.11	0.46	0.96	<0.05	<0.02	<0.02	-
MW173	OCA	13 Oct 2021	0207_MW173_211013	OMP Oct 2021	0.27	<0.02	-	0.21	***2.46***	-	0.28	-	**2.54**	0.3	0.02	<0.02	0.63	1.18	0.14	**0.60**	1.10	<0.05	<0.02	<0.02	-
MW173	OCA	17 Apr 2022	0207_MW173_220417	OMP Apr 2022	0.24	<0.02	-	0.15	***2.90***	-	0.25	-	**2.37**	0.3	<0.02	<0.02	0.47	1.05	0.14	0.56	0.93	<0.06[#2]	<0.02	<0.02	-
MW173	OCA	24 Oct 2022	0207_MW173_221024	OMP Oct 2022	0.30	<0.02	-	0.20	***2.34***	-	0.35	-	**2.42**	0.4	<0.02	<0.02	0.55	1.47	0.12	0.49	1.07	<0.05	<0.02	<0.02	-
MW173	OCA	12 Apr 2023	0207_MW173_230412	OMP Apr 2023	0.39	<0.02	-	0.19	***2.31***	-	0.38	-	**2.49**	0.4	0.02	<0.02	0.61	1.52	0.12	0.51	1.19	<0.05	<0.02	<0.02	-
MW173	OCA	24 Oct 2023	0207_MW173_231024	OMP Oct 2023	0.49	<0.02	-	0.14	***1.80***	-	0.36	-	**2.71**	0.4	<0.02	<0.02	0.59	1.28	0.12	**0.59**	1.32	<0.05	<0.02	<0.02	-
MW173	OCA	24 Oct 2023	0207_QC100_231024	OMP Oct 2023	0.41	<0.02	-	0.16	***1.94***	-	0.40	-	**2.94**	0.4	<0.02	<0.02	0.59	1.17	0.11	**0.59**	1.34	<0.05	<0.02	<0.02	-
MW173	OCA	24 Oct 2023	0207_QC200_231024	OMP Oct 2023	0.39	<0.01	-	0.094	***2.1***	-	0.3	<0.01	**1.8**	0.43	0.01	<0.01	0.61	1.3	0.11	0.51	1.4	<0.02	<0.02	<0.01	<0.02
MW173	OCA	02 Apr 2024	0207_MW173_240402	OMP Apr 2024	0.26	<0.02	-	0.12	***1.98***	-	0.26	-	**2.14**	0.3	<0.02	<0.02	0.51	1.09	0.09	0.45	0.98	<0.05	<0.02	<0.02	-
MW173	OCA	10 Oct 2024	0207_QC204_241010	OMP Oct 2024	0.40	<0.01	<0.01	0.14[#1]	***2.7[#1]***	0.17	0.40[#1]	-	**3.2[#1]**	0.48	0.02	<0.01	0.68[#1]	2.0	0.11[#1]	0.56[#1]	1.5	<0.01	<0.01	<0.01	-
MW173	OCA	10 Oct 2024	0207_QC104_241010	OMP Oct 2024	0.42	<0.02	-	0.17	***2.88***	-	0.40	-	**2.72**	0.4	0.03	<0.02	0.77	1.76	0.14	**0.59**	1.39	<0.05	<0.02	<0.02	<0.05
MW173	OCA	10 Oct 2024	0207_MW173_241010	OMP Oct 2024	0.46	<0.02	-	0.26	***4.16***	-	0.56	-	**3.88**	0.6	0.04	<0.02	0.96	2.31	0.18	**0.83**	2.21	<0.05	<0.02	<0.02	<0.05
MW174	OCA	20 Oct 2018	AACO-QC101-181020	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	OCA	20 Oct 2018	AACO-MWA4-A-181020	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	OCA	20 Oct 2018	AACO_QC201_181020	OMP Oct 2018	<0.01	<0.01	-	<0.01	<0.02	-	<0.01	<0.01	0.013	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW174	OCA	10 Jul 2019	0207_MWA4-A_190710	OMP July 2019	0.0313	<0.0005	-	0.0046	***0.0755***	-	0.0241	-	**0.0957**	0.016	0.0012	<0.0005	0.0267	0.101	0.0008	0.0141	0.130	<0.0005	<0.0005	<0.0005	-
MW174	OCA	22 Oct 2019	0207_QC100_191022	OMP Oct 2019	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	OCA	22 Oct 2019	0207_QC200_191022	OMP Oct 2019	<0.01	<0.01	-	<0.01	<0.02	-	<0.01	<0.01	0.012	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW174	OCA	22 Oct 2019	0207_MW174_191022	OMP Oct 2019	<0.02	<0.02	-	<0.02	*0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	OCA	29 Oct 2019	0207_MWA4-A_191029	OMP Oct 2019	0.0406	<0.0005	-	0.0040	*0.0612*	-	0.0273	-	**0.0838**	0.015	0.0013	<0.0005	0.0381	0.149	0.0015	0.0110	0.184	<0.0005	<0.0005	<0.0005	-
MW174	OCA	04 Mar 2020	0207_MWA4-A_200304	OMP Apr 2020	0.0293	<0.0005	-	0.0026	*0.0408*	-	0.0171	-	0.0588	0.012	0.0010	<0.0005	0.0641	0.0920	0.0010	0.0120	0.264	<0.0005	<0.0005	<0.0005	-
MW174	OCA	26 Mar 2020	0207_MW174_200326	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	0.05	<0.05	<0.02	<0.02	-
MW174	OCA	22 May 2020	0207_MW174_200522	OMP Apr 2020	0.02	<0.02	-	<0.02	***0.17***	-	<0.02	-	**0.16**	<0.10	<0.02	<0.02	<0.02	0.04	<0.02	<0.01	0.05	<0.05	<0.02	<0.02	-
MW174	OCA	19 Oct 2020	0207_MW174_201020	OMP Oct 2020	<0.60[#2]	<0.02	-	<0.02	***0.09***	-	0.02	-	**0.09**	<0.20[#2]	<0.02	<0.02	0.06	0.09	<0.02	<0.01	0.16	<0.05	<0.02	<0.02	-
MW174	OCA	14 Apr 2021	0207_MW174_210414	OMP Apr 2021	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	0.06	<0.2[#2]	<0.02	<0.02	0.05	<0.11[#2]	<0.02	<0.01	0.17	<0.05	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW174	OCA	13 Oct 2021	0207_MW174_211013	OMP Oct 2021	<1.43[#2]	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	0.09	0.16	<0.02	0.01	0.40	<0.05	<0.02	<0.02	-
MW174	OCA	17 Apr 2022	0207_MW174_220417	OMP Apr 2022	<0.04[#2]	<0.02	-	<0.02	*0.03*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.03	<0.05	<0.02	<0.02	-
MW174	OCA	02 Nov 2022	0207_MW174_221102	OMP Oct 2022	<0.02	<0.02	-	<0.02	*0.03*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	0.03	0.04	<0.02	<0.01	0.09	<0.05	<0.02	<0.02	-
MW174	OCA	13 Apr 2023	0207_MW174_230413	OMP Apr 2023	0.03	<0.02	-	<0.02	*0.03*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.04	<0.05	<0.02	<0.02	-
MW174	OCA	24 Oct 2023	0207_MW174_231024	OMP Oct 2023	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.04	<0.05	<0.02	<0.02	-
MW174	OCA	03 Apr 2024	0207_QC201_240403	OMP Apr 2024	<0.01	<0.01	-	<0.01	<0.02	-	<0.01	<0.01	0.016	<0.05	<0.01	<0.01	0.027	0.039	<0.01	<0.01	0.1	<0.02	<0.02	<0.01	<0.02
MW174	OCA	03 Apr 2024	0207_QC101_240403	OMP Apr 2024	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	OCA	03 Apr 2024	0207_MW174_240403	OMP Apr 2024	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	OCA	09 Oct 2024	0207_MW174_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW178	OCA	19 Oct 2018	AACO-MWA4-B-UA-1810	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	11 Jul 2019	0207_MWA4-B-UA_19071	OMP July 2019	<0.0005	<0.0005	-	<0.0005	*0.0049*	-	0.0008	-	0.0058	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	-
MW178	OCA	23 Oct 2019	0207_MW178_191023	OMP Oct 2019	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	29 Oct 2019	0207_MWA4-B-UA_19102	OMP Oct 2019	<0.0005	<0.0005	-	0.0007	*0.0040*	-	0.0007	-	0.0054	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-
MW178	OCA	04 Mar 2020	0207_MWA4-BUA_20030	OMP Apr 2020	0.0026	<0.0005	-	<0.0005	*0.0026*	-	0.0012	-	0.0073	<0.002	<0.0005	<0.0005	<0.0005	0.0013	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	-
MW178	OCA	26 Mar 2020	0207_MW178_200326	OMP Apr 2020	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	08 Apr 2020	0207_MWA4-B-UA_20040	OMP Apr 2020	<0.02	<0.02	-	<0.02	*0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	19 Oct 2020	0207_QC131_201019	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	19 Oct 2020	0207_MW178_201019	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	19 Oct 2020	0207_QC231_201019	OMP Oct 2020	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
MW178	OCA	24 Mar 2021	0207_QC102_210324	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	24 Mar 2021	0207_MWA4-B-UA_21032	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	24 Mar 2021	0207_QC202_210324	OMP Apr 2021	<0.01	<0.01	-	<0.01	<0.02	<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	-
MW178	OCA	17 Apr 2021	0207_MW178_210417	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	11 Oct 2021	0207_MW178_211011	OMP Oct 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	08 Feb 2022	0207_QC202_220208	OMR Feb 2022	<0.01	<0.01	-	<0.01	*0.06*[#1]	<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	-
MW178	OCA	08 Feb 2022	0207_QC102_220208	OMR Feb 2022	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	08 Feb 2022	0207_MW178_220208	OMR Feb 2022	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	17 Apr 2022	0207_MW178_220417	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	02 Nov 2022	0207_MW178_221102	OMP Oct 2022	<0.04[#2]	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	13 Apr 2023	0207_MW178_230413	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	24 Oct 2023	0207_MW178_231024	OMP Oct 2023	<0.04[#2]	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	03 Apr 2024	0207_MW178_240403	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	OCA	09 Oct 2024	0207_QC203_241009	OMP Oct 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	0.01[#1]	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
MW178	OCA	09 Oct 2024	0207_QC103_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW178	OCA	09 Oct 2024	0207_MW178_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW179	OCA	20 Oct 2018	AACO-MWA5-A-LA-18102	OMP Oct 2018	0.41	<0.02	-	0.18	***1.98***	-	0.36	-	**2**	0.2	<0.02	<0.02	0.18	1.05	<0.02	0.26	0.2	<0.05	<0.02	<0.02	-
MW179	OCA	20 Oct 2018	AACO-QC102-181020	OMP Oct 2018	0.49	<0.02	-	0.17	***2.06***	-	0.36	-	**1.95**	0.2	<0.02	<0.02	0.18	1.04	<0.02	0.27	0.2	<0.05	<0.02	<0.02	-
MW179	OCA	20 Oct 2018	AACO_QC202_181020	OMP Oct 2018	0.46	<0.01	-	0.15	***2.6***	-	0.36	<0.01	**2.1**	0.23	<0.01	<0.01	0.18	1.1	<0.01	0.25	0.24	<0.02	<0.02	<0.01	<0.02
MW179	OCA	06 Nov 2019	0207_MW179_191106	OMP Oct 2019	0.46	<0.02	-	0.17	***1.78***	-	0.41	-	**2.08**	<0.1	<0.02	<0.02	0.20	1.06	<0.02	0.27	0.22	<0.05	<0.02	<0.02	-
MW179	OCA	23 Mar 2020	0207_QC214_200323	OMP Apr 2020	0.49	<0.01	-	0.13	***1.9***	-	0.38	<0.01	**2.0**	0.23	<0.01	<0.01	0.19	1.0	<0.01	0.27	0.25	<0.02	<0.02	<0.01	<0.02
MW179	OCA	23 Mar 2020	0207_QC114_200323	OMP Apr 2020	0.38	<0.02	-	0.18	***2.03***	-	0.35	-	**1.96**	0.2	<0.02	<0.02	0.17	1.13	<0.02	0.28	0.19	<0.05	<0.02	<0.02	-
MW179	OCA	23 Mar 2020	0207_MW179_200323	OMP Apr 2020	0.60	<0.02	-	0.21	***2.79***	-	0.48	-	**2.49**	0.2	<0.02	<0.02	0.26	1.40	<0.02	0.33	0.27	<0.05	<0.02	<0.02	-
MW179	OCA	20 Oct 2020	0207_MW179_201020	OMP Oct 2020	0.52	<0.02	-	0.23	***3.01***	-	0.43	-	**2.30**	0.2	<0.02	<0.02	0.23	1.47	<0.02	0.35	0.29	<0.05	<0.02	<0.02	-
MW179	OCA	16 Apr 2021	0207_QC250_210416	OMP Apr 2021	0.53	<0.01	-	0.16	***2.7***	-	0.42	<0.01	**2.4**	0.22	<0.01	<0.01	0.19	1.3	<0.01	0.28	0.25	<0.02	<0.02	<0.01	<0.02
MW179	OCA	16 Apr 2021	0207_MW179_210416	OMP Apr 2021	0.57	<0.02	-	0.26	***3.05***	-	0.51	-	**2.60**	0.33	<0.02	<0.02	0.25	1.34	<0.02	0.35	0.30	<0.05	<0.02	<0.02	-
MW179	OCA	16 Apr 2021	0207_QC150_210416	OMP Apr 2021	0.58	<0.02	-	0.25	***3.21***	-	0.52	-	**2.67**	0.23	<0.02	<0.02	0.27	1.44	<0.02	0.40	0.32	<0.05	<0.02	<0.02	-
MW179	OCA	11 Oct 2021	0207_MW179_211011	OMP Oct 2021	0.62	<0.02	-	0.31	***3.89***	-	0.56	-	**2.76**	0.2	<0.02	<0.02	0.26	1.70	<0.02	0.43	0.28	<0.05	<0.02	<0.02	-
MW179	OCA	18 Apr 2022	0207_MW179_220418	OMP Apr 2022	0.54	<0.02	-	0.20	***2.33***	-	0.46	-	**2.39**	0.2	<0.02	<0.02	0.23	1.37	<0.02	0.41	0.27	<0.06[#2]	<0.02	<0.02	-
MW179	OCA	03 Nov 2022	0207_MW179_221103	OMP Oct 2022	0.94	<0.02	-	0.30	***4.19***	-	0.53	-	**2.76**	0.2	<0.02	<0.02	0.32	1.82	<0.02	**0.62**	0.36	<0.05	<0.02	<0.02	-
MW179	OCA	13 Apr 2023	0207_MW179_230413	OMP Apr 2023	0.73	<0.02	-	0.27	***2.59***	-	0.55	-	**2.66**	0.3	<0.02	<0.02	0.30	1.58	<0.02	0.54	0.31	<0.05	<0.02	<0.02	-
MW179	OCA	24 Oct 2023	0207_MW179_231024	OMP Oct 2023	0.62	<0.02	-	0.23	***3.65***	-	0.48	-	**2.60**	0.2	<0.02	<0.02	0.24	1.24	<0.02	0.47	0.33	<0.05	<0.02	<0.02	-
MW179	OCA	03 Apr 2024	0207_MW179_240403	OMP Apr 2024	0.42	<0.02	-	0.17	***2.63***	-	0.33	-	**1.88**	0.2	<0.02	<0.02	0.19	1.03	<0.02	0.31	0.22	<0.05	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW179	OCA	09 Oct 2024	0207_MW179_241009	OMP Oct 2024	0.48	<0.02	-	0.24	***3.45***	-	0.43	-	**2.13**	0.2	<0.02	<0.02	0.20	1.33	<0.02	0.34	0.30	<0.05	<0.02	<0.02	<0.05
MW187	OCA	25 Oct 2018	AACO-QC106-181025	OMP Oct 2018	0.07	<0.02	-	0.03	***0.49***	-	0.12	-	**0.87**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW187	OCA	25 Oct 2018	AACO-MWB5-A-181025	OMP Oct 2018	0.08	<0.02	-	0.04	***0.58***	-	0.13	-	**0.97**	<0.1	<0.02	<0.02	<0.02	0.15	<0.02	0.04	0.03	<0.05	<0.02	<0.02	-
MW187	OCA	25 Oct 2018	AACO_QC206_181025	OMP Oct 2018	0.082	<0.01	-	0.025	***0.6***	-	0.091	<0.01	**0.77**	<0.05	<0.01	<0.01	0.018	0.12	<0.01	0.031	0.03	<0.02	<0.02	<0.01	<0.02
MW187	OCA	11 Jul 2019	0207_MWB5-A_190710	OMP July 2019	0.0507	<0.0005	-	0.0270	***0.274***	-	0.0922	-	**0.475**	0.005	<0.0005	<0.0005	0.0131	0.114	0.0007	0.0250	0.0226	<0.0005	<0.0005	<0.0005	-
MW187	OCA	11 Jul 2019	0207_QC1MW_190711_0	OMP July 2019	0.0571	<0.0005	-	0.0269	***0.302***	-	0.0910	-	**0.536**	0.008	<0.0005	<0.0005	0.0144	0.127	0.0007	0.0294	0.0217	<0.0005	<0.0005	<0.0005	-
MW187	OCA	22 Oct 2019	0207_MW187_191022	OMP Oct 2019	0.06	<0.02	-	0.02	***0.31***	-	0.09	-	**0.71**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW187	OCA	29 Oct 2019	0207_MWB5-A_191029	OMP Oct 2019	0.0908	<0.0005	-	0.0394	***0.339***	-	0.103	-	**0.603**	0.009	<0.0005	<0.0005	0.0159	0.167	0.0008	0.0320	0.0311	<0.0005	<0.0005	<0.0005	-
MW187	OCA	04 Mar 2020	0207_QC1MW_200304	OMP Apr 2020	0.0658	<0.0005	-	0.0281	***0.284***	-	0.0817	-	**0.488**	<0.002	<0.0005	<0.0005	0.0127	0.0964	0.0005	0.0240	0.0227	<0.0005	<0.0005	<0.0005	-
MW187	OCA	04 Mar 2020	0207_MWA4-B5-A_20030	OMP Apr 2020	0.0726	<0.0005	-	0.0317	***0.373***	-	0.109	-	**0.659**	<0.002	<0.0005	<0.0005	0.0154	0.111	0.0007	0.0292	0.0256	<0.0005	<0.0005	<0.0005	-
MW187	OCA	25 Mar 2020	0207_QC216_200325	OMP Apr 2020	0.060	<0.01	-	0.018	***0.31***	-	0.074	<0.01	**0.66**	<0.05	<0.01	<0.01	0.013	0.11	<0.01	0.024	0.023	<0.02	<0.02	<0.01	<0.02
MW187	OCA	25 Mar 2020	0207_MW187_200325	OMP Apr 2020	<0.09[#2]	<0.09[#2]	-	<0.09[#2]	***0.38***	-	0.09	-	**0.73**	<0.5[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	0.11	<0.09[#2]	<0.09[#2]	<0.09[#2]	<0.23[#2]	<0.09[#2]	<0.09[#2]	-
MW187	OCA	20 Oct 2020	0207_MW187_201020	OMP Oct 2020	0.06	<0.02	-	0.03	***0.34***	-	0.08	-	**0.60**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.03	0.02	<0.05	<0.02	<0.02	-
MW187	OCA	17 Apr 2021	0207_MW187_210417	OMP Apr 2021	0.09	<0.02	-	0.03	***0.31***	-	0.08	-	**0.58**	<0.10	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW187	OCA	13 Oct 2021	0207_MW187_211013	OMP Oct 2021	<0.06[#2]	<0.05[#2]	-	<0.05[#2]	***0.37***	-	0.07	-	**0.67**	<0.2[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	0.12	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW187	OCA	11 Apr 2022	0207_MW187_220411	OMP Apr 2022	0.03	<0.02	-	<0.02	***0.45***	-	0.02	-	**0.16**	0.1	<0.02	<0.02	<0.02	0.24	<0.02	<0.01	0.13	<0.05	<0.02	<0.02	-
MW187	OCA	27 Oct 2022	0207_MW187_221027	OMP Oct 2022	0.05	<0.02	-	<0.02	***0.32***	-	0.06	-	**0.41**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.05	<0.05	<0.02	<0.02	-
MW187	OCA	13 Apr 2023	0207_MW187_230413	OMP Apr 2023	0.06	<0.02	-	0.02	***0.37***	-	0.07	-	**0.50**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW187	OCA	26 Oct 2023	0207_MW187_231026	OMP Oct 2023	<0.04[#2]	<0.02	-	<0.02	***0.22***	-	0.06	-	**0.46**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW187	OCA	03 Apr 2024	0207_MW187_240403	OMP Apr 2024	0.03	<0.02	-	<0.02	***0.18***	-	0.04	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	20 Oct 2018	AACO-MWB5-B-181020	OMP Oct 2018	<0.02	<0.02	-	<0.02	***0.07***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	11 Jul 2019	0207_MWB5-B_190711	OMP July 2019	0.0072	<0.0005	-	0.0034	*0.0645*	-	0.0123	-	**0.0707**	<0.002	<0.0005	<0.0005	0.0017	0.0149	<0.0005	0.0033	0.0027	<0.0005	<0.0005	<0.0005	-
MW189	OCA	22 Oct 2019	0207_MW189_191022	OMP Oct 2019	<0.02	<0.02	-	<0.02	***0.06***	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	29 Oct 2019	0207_MWB5-B_191029	OMP Oct 2019	0.0128	<0.0005	-	0.0044	***0.0997***	-	0.0141	-	**0.0957**	0.002	<0.0005	<0.0005	0.0020	0.0180	<0.0005	0.0042	0.0039	<0.0005	<0.0005	<0.0005	-
MW189	OCA	04 Mar 2020	0207_MWB5-B_200304	OMP Apr 2020	0.0106	<0.0005	-	0.0046	***0.0880***	-	0.0144	-	**0.0772**	<0.002	<0.0005	<0.0005	0.0024	0.0145	<0.0005	0.0047	0.0040	<0.0005	<0.0005	<0.0005	-
MW189	OCA	25 Mar 2020	0207_MW189_200325	OMP Apr 2020	<0.03[#2]	<0.03[#2]	-	<0.03[#2]	***0.08***	-	<0.03[#2]	-	**0.08**	<0.2[#2]	<0.03[#2]	<0.03[#2]	<0.03[#2]	<0.03[#2]	<0.03[#2]	<0.03[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.03[#2]	-
MW189	OCA	20 Oct 2020	0207_MW189_201020	OMP Oct 2020	<0.02	<0.02	-	<0.02	***0.12***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	17 Apr 2021	0207_MW189_210417	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.12***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	13 Oct 2021	0207_MW189_211013	OMP Oct 2021	<0.02	<0.02	-	<0.02	***0.09***	-	<0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	11 Apr 2022	0207_MW189_220411	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	27 Oct 2022	0207_MW189_221027	OMP Oct 2022	0.02	<0.02	-	<0.02	***0.06***	-	<0.02	-	0.07	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#2]	<0.02	<0.06[#2]	<0.02	<0.02	-
MW189	OCA	13 Apr 2023	0207_QC206_230413	OMP Apr 2023	0.012	<0.01	-	<0.01	***0.078***	-	0.017	<0.01	**0.12**	<0.05	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW189	OCA	13 Apr 2023	0207_QC106_230413	OMP Apr 2023	0.02	<0.02	-	<0.02	***0.10***	-	0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	13 Apr 2023	0207_MW189_230413	OMP Apr 2023	0.02	<0.02	-	<0.02	***0.10***	-	0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	26 Oct 2023	0207_MW189_231026	OMP Oct 2023	<0.02	<0.02	-	<0.02	***0.08***	-	0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	03 Apr 2024	0207_MW189_240403	OMP Apr 2024	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	OCA	09 Oct 2024	0207_MW189_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	***0.09***	-	0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW193	OCA	20 Oct 2018	AACO-MWC1-C-181026	OMP Oct 2018	2.71	<0.02	-	1.22	***19***	-	2.54	-	**14.6**	2.8	<0.02	<0.02	1.73	6.66	0.02	**2.96**	1.71	<0.05	<0.02	<0.02	-
MW193	OCA	11 Jul 2019	0207_MWC1-C_190711	OMP July 2019	2.37	<0.0200[#2]	-	1.23	***12.9***	-	2.67	-	**13.5**	1.19	<0.0200[#2]	<0.0200[#2]	1.57	7.09	<0.0200[#2]	**2.61**	1.72	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW193	OCA	11 Jul 2019	0207_MWC1-H_190711	OMP July 2019	0.814	<0.0200[#2]	-	1.00	***26.8***	-	0.978	-	**7.50**	0.382	<0.0200[#2]	<0.0200[#2]	0.578	2.97	<0.0200[#2]	**1.31**	1.34	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW193	OCA	23 Oct 2019	0207_MW193_191023	OMP Oct 2019	3.48	<0.02	-	1.49	***21.8***	-	3.94	-	**21.3**	2.4	<0.02	<0.02	2.68	11.7	0.04	**4.05**	2.55	<0.05	<0.02	<0.02	-
MW193	OCA	30 Oct 2019	0207_MWC1-C_191030	OMP Oct 2019	4.28	<0.0100[#2]	-	2.43	***21.4***	-	4.64	-	**18.4**	1.02	<0.0100[#2]	<0.0100[#2]	2.52	9.83	0.0480	**5.06**	3.08	<0.0250[#2]	<0.0100[#2]	<0.0100[#2]	-
MW193	OCA	30 Oct 2019	0207_MWC1-H_191030	OMP Oct 2019	1.28	<0.0100[#2]	-	1.57	***33.1***	-	1.50	-	**9.84**	0.963	<0.0100[#2]	<0.0100[#2]	0.987	4.18	0.0290	**2.02**	1.76	<0.0250[#2]	<0.0100[#2]	<0.0100[#2]	-
MW193	OCA	05 Mar 2020	0207_MWC1-C_200305	OMP Apr 2020	2.48	<0.0016[#2]	-	1.53	***12.6***	-	2.49	-	**12.8**	0.920	<0.0016[#2]	<0.0016[#2]	1.65	7.04	0.0221	**2.78**	1.57	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW193	OCA	25 Mar 2020	0207_MW193_200325	OMP Apr 2020	3.93	<0.16[#2]	-	1.96	***24.1***	-	3.88	-	**20.4**	1.4	<0.16[#2]	<0.16[#2]	2.74	9.98	<0.16[#2]	**3.95**	2.46	<0.40[#2]	<0.16[#2]	<0.16[#2]	-
MW193	OCA	08 Apr 2020	0207_MWC1-C_200408	OMP Apr 2020	3.60	<0.50[#2]	-	1.15	***16.0***	-	3.50	-	**16.0**	3.35	<0.50[#2]	<0.50[#2]	2.15	9.40	<0.50[#2]	**3.10**	2.20	<1.25[#2]	<0.50[#2]	<0.50[#2]	-
MW193	OCA	20 Oct 2020	0207_QC234_201020	OMP Oct 2020	3	<0.01	-	1.1	***17***	-	2.6	<0.01	**14**	3	<0.01	<0.01	1.8	6.8	0.038	**2.7**	1.9	<0.02	<0.02	<0.01	<0.02
MW193	OCA	20 Oct 2020	0207_MW193_201020	OMP Oct 2020	3.20	<0.07[#2]	-	1.68	***17.3***	-	3.48	-	**17.1**	3.9	<0.07[#2]	<0.07[#2]	2.42	9.39	<0.07[#2]	**3.54**	2.31	<0.18[#2]	<0.07[#2]	<0.07[#2]	-
MW193	OCA	20 Oct 2020	0207_QC134_201020	OMP Oct 2020	3.36	<0.04[#2]	-	1.85	***21.5***	-	3.64	-	**17.3**	1.9	<0.04[#2]	<0.04[#2]	2.46	9.80	0.05	**3.74**	2.30	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW193	OCA	24 Mar 2021	0207_MWC1-C_210224	OMP Apr 2021	3.48	<0.02	-	1.85	***18.0***	-	3.85	-	**16.3**	3.7	<0.02	<0.02	2.63	9.11	0.05	**3.80**	2.60	<0.05	<0.02	<0.02	-
MW193	OCA	14 Apr 2021	0207_MW193_210414	OMP Apr 2021	3.91	<0.04[#2]	-	1.84	***25.9***	-	4.23	-	**17.0**	4.1	<0.04[#2]	<0.04[#2]	2.52	9.92	0.04	**3.80**	2.62	<0.10[#2]	<0.04[#2]	<0.04[#2]	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW193	OCA	11 Oct 2021	0207_MW193_211011	OMP Oct 2021	4.26	<0.02	-	2.28	***24.7***	-	4.47	-	**20.7**	4.2	<0.02	<0.02	2.75	11.3	0.05	**4.16**	2.47	<0.06[#2]	<0.02	<0.02	-
MW193	OCA	09 Feb 2022	0207_MW193_220209	OMR Feb 2022	3.69	<0.02	-	1.79	***20.7***	-	4.64	-	**18.6**	5.9	<0.02	<0.02	2.32	10.2	<0.02	**3.48**	2.33	<0.06[#2]	<0.02	<0.02	-
MW193	OCA	17 Apr 2022	0207_MW193_220417	OMP Apr 2022	2.94	<0.02	-	1.35	***16.7***	-	2.77	-	**14.8**	6.0	<0.02	<0.02	1.87	8.13	<0.02	**2.91**	1.92	<0.06[#2]	<0.02	<0.02	-
MW193	OCA	26 Oct 2022	0207_MW193_221026	OMP Oct 2022	2.21	<0.02	-	0.92	***12.8***	-	2.11	-	**11.5**	4.8	<0.02	<0.02	1.52	6.18	<0.02	**2.20**	1.40	<0.06[#2]	<0.02	<0.02	-
MW193	OCA	12 Apr 2023	0207_MW193_230412	OMP Apr 2023	2.62	<0.05[#2]	-	1.08	***11.2***	-	2.64	-	**12.9**	4.1	<0.05[#2]	<0.05[#2]	1.41	5.88	<0.05[#2]	**2.20**	1.40	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW193	OCA	24 Oct 2023	0207_MW193_231024	OMP Oct 2023	1.82	<0.02	-	0.75	***8.65***	-	1.83	-	**10.9**	4.5	<0.02	<0.02	0.78	2.89	<0.02	**1.48**	0.98	<0.05	<0.02	<0.02	-
MW193	OCA	02 Apr 2024	0207_MW193_240402	OMP Apr 2024	1.75	<0.02	-	0.74	***11.3***	-	1.93	-	**11.0**	6.3	<0.02	<0.02	1.05	4.38	<0.02	**1.46**	1.15	<0.05	<0.02	<0.02	-
MW193	OCA	10 Oct 2024	0207_MW193_241010	OMP Oct 2024	2.49	<0.05[#2]	-	0.98	***9.64***	-	2.78	-	**15.9**	9.0	<0.05[#2]	<0.05[#2]	1.42	6.22	<0.05[#2]	**2.05**	1.88	<0.12[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]
MW198	OCA	21 Oct 2018	AACO-MWC1-H-181021	OMP Oct 2018	1.23	<0.02	-	1.21	***33***	-	1.26	-	**8.66**	0.7	<0.02	<0.02	0.93	3.41	0.02	**1.64**	1.36	<0.05	<0.02	<0.02	-
MW198	OCA	22 Oct 2019	0207_MW198_191022	OMP Oct 2019	1.06	<0.02	-	1.35	***30.9***	-	1.20	-	**9.28**	1.4	<0.02	<0.02	0.96	3.58	0.03	**1.67**	1.44	<0.05	<0.02	<0.02	-
MW198	OCA	05 Mar 2020	0207_MWC1-H_200305	OMP Apr 2020	0.0082	<0.0005	-	0.0141	***0.626***	-	0.0099	-	**0.0804**	<0.002	0.0010	<0.0005	0.0080	0.0279	0.0012	0.0141	0.0127	<0.0005	<0.0005	<0.0005	-
MW198	OCA	25 Mar 2020	0207_MW198_200325	OMP Apr 2020	1.06	<0.16[#2]	-	1.30	***28.6***	-	1.19	-	**8.88**	<0.8[#2]	<0.16[#2]	<0.16[#2]	0.88	3.31	<0.16[#2]	**1.38**	1.33	<0.40[#2]	<0.16[#2]	<0.16[#2]	-
MW198	OCA	19 Oct 2020	0207_MW198_201019	OMP Oct 2020	0.60	<0.04[#2]	-	0.60	***14.0***	-	0.66	-	**4.51**	0.5	<0.04[#2]	<0.04[#2]	0.51	1.89	<0.04[#2]	**0.86**	0.82	<0.09[#2]	<0.04[#2]	<0.04[#2]	-
MW198	OCA	14 Apr 2021	0207_MW198_210414	OMP Apr 2021	0.14	<0.02	-	0.18	***5.40***	-	0.18	-	**1.28**	0.1	<0.02	<0.02	0.14	0.43	<0.02	0.21	0.19	<0.05	<0.02	<0.02	-
MW198	OCA	11 Oct 2021	0207_MW198_211011	OMP Oct 2021	0.25	<0.02	-	0.33	***6.73***	-	0.29	-	**2.00**	0.1	<0.02	<0.02	0.20	0.67	<0.02	0.31	0.25	<0.05	<0.02	<0.02	-
MW198	OCA	17 Apr 2022	0207_MW198_220417	OMP Apr 2022	0.23	<0.02	-	0.24	***5.99***	-	0.21	-	**1.56**	0.1	<0.02	<0.02	0.16	0.62	<0.02	0.29	0.26	<0.05	<0.02	<0.02	-
MW198	OCA	25 Oct 2022	0207_QC263_221025	OMP Oct 2022	0.50	<0.02	-	0.65	***17.8***	-	0.65	-	**4.56**	0.5	<0.02	<0.02	0.49	1.83	<0.02	**0.82**	0.97	<0.05	<0.02	<0.02	-
MW198	OCA	04 Nov 2022	0207_QC163_221025	OMP Oct 2022	0.60	<0.02	-	0.84	***18.5***	-	0.73	-	**5.05**	0.7	<0.02	<0.02	0.55	2.56	<0.02	**0.92**	1.05	<0.06[#2]	<0.02	<0.02	-
MW198	OCA	04 Nov 2022	0207_MW198_221025	OMP Oct 2022	0.65	<0.05[#2]	-	0.82	***19.6***	-	0.78	-	**5.49**	0.6	<0.05[#2]	<0.05[#2]	0.61	2.40	<0.05[#2]	**0.98**	1.13	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW198	OCA	12 Apr 2023	0207_MW198_230412	OMP Apr 2023	0.12	<0.02	-	0.17	***4.31***	-	0.14	-	**0.99**	<0.1	<0.02	<0.02	0.08	0.24	<0.02	0.13	0.12	<0.05	<0.02	<0.02	-
MW198	OCA	24 Oct 2023	0207_MW198_231024	OMP Oct 2023	0.07	<0.02	-	0.16	***5.83***	-	0.11	-	**1.06**	<0.1	<0.02	<0.02	0.06	0.16	<0.02	0.12	0.10	<0.05	<0.02	<0.02	-
MW198	OCA	02 Apr 2024	0207_MW198_240402	OMP Apr 2024	0.26	<0.02	-	0.30	***9.13***	-	0.24	-	**2.04**	0.2	<0.02	<0.02	0.20	0.64	<0.02	0.34	0.33	<0.05	<0.02	<0.02	-
MW198	OCA	10 Oct 2024	0207_MW198_241010	OMP Oct 2024	0.51	<0.05[#2]	-	0.68	***13.6***	-	0.58	-	**4.55**	0.4	<0.05[#2]	<0.05[#2]	0.44	1.74	<0.05[#2]	**0.78**	0.92	<0.12[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]
MW201	OCA	10 Jul 2019	0207_MW201_190710	OMP July 2019	3.39	<0.0005	-	1.67	***10.8***	-	4.28	-	**24.4**	0.236	0.0008	<0.0005	0.804	5.56	0.0159	**1.63**	1.19	<0.0005	<0.0005	<0.0005	-
MW201	OCA	22 Oct 2019	0207_QC203_191022	OMP Oct 2019	28	<0.01	-	7.9	***100***	-	25	<0.01	**200**	5.7	<0.01	<0.01	5.0	36	0.072	**9.8**	8.0	<0.02	<0.02	<0.01	<0.02
MW201	OCA	22 Oct 2019	0207_MW201_191022	OMP Oct 2019	31.6	<0.02	-	10.4	***89.1***	-	30.8	-	**203**	4.2	<0.02	<0.02	6.07	37.9	0.09	**11.1**	8.39	<0.05	<0.02	<0.02	-
MW201	OCA	22 Oct 2019	0207_QC103_191022	OMP Oct 2019	30.2	<0.02	-	11.8	***99.2***	-	30.0	-	**207**	4.1	<0.02	<0.02	6.30	41.3	0.10	**11.4**	8.86	<0.05	<0.02	<0.02	-
MW201	OCA	30 Oct 2019	0207_MW201_191030	OMP Oct 2019	4.12	<0.0005	-	1.24	***10.4***	-	3.64	-	**28.7**	0.388	0.0011	<0.0005	0.798	6.38	0.0191	**1.71**	1.33	<0.0005	<0.0005	<0.0005	-
MW201	OCA	05 Mar 2020	0207_MW201_200305	OMP Apr 2020	4.96	<0.0160[#2]	-	3.97	***25.3***	-	6.85	-	**48.0**	0.139	<0.0160[#2]	<0.0160[#2]	1.24	8.29	0.0304	**3.90**	1.80	<0.0400[#2]	<0.0160[#2]	<0.0160[#2]	-
MW201	OCA	26 Mar 2020	0207_MW201_200326	OMP Apr 2020	6.30	<0.07[#2]	-	3.49	***28.9***	-	7.96	-	**52.8**	0.6	<0.07[#2]	<0.07[#2]	1.76	10.0	<0.07[#2]	**3.81**	1.97	<0.18[#2]	<0.07[#2]	<0.07[#2]	-
MW201	OCA	23 Oct 2020	0207_MW201_201023	OMP Oct 2020	10.2	<0.19[#2]	-	4.06	***36.2***	-	10.8	-	**69.0**	<0.9[#2]	<0.19[#2]	<0.19[#2]	2.29	16.0	<0.19[#2]	**4.36**	3.44	<0.47[#2]	<0.19[#2]	<0.19[#2]	-
MW201	OCA	15 Apr 2021	0207_MW201_210415	OMP Apr 2021	11.2	<0.04[#2]	-	3.88	***33.7***	-	14.8	-	**67.2**	1.9	<0.04[#2]	<0.04[#2]	2.57	17.3	<0.04[#2]	**4.67**	3.85	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW201	OCA	12 Oct 2021	0207_MW201_211012	OMP Oct 2021	12.6	<0.10[#2]	-	5.58	***36.5***	-	14.3	-	**80.2**	2.1	<0.10[#2]	<0.10[#2]	2.70	19.8	<0.10[#2]	**5.41**	3.57	<0.24[#2]	<0.10[#2]	<0.10[#2]	-
MW201	OCA	17 Apr 2022	0207_QC207_220417	OMP Apr 2022	13	<0.01	-	4.4	***40***	-	12	<0.01	**79**	2.5	<0.01	<0.01	4	18	0.041	**4.3**	3.8	<0.02	<0.02	<0.01	<0.02
MW201	OCA	17 Apr 2022	0207_QC107_220417	OMP Apr 2022	12.9	<0.02	-	4.53	***50.8***	-	13.0	-	**85.7**	3.4	<0.02	<0.02	2.62	18.3	0.06	**5.32**	4.80	<0.05	<0.02	<0.02	-
MW201	OCA	17 Apr 2022	0207_MW201_220417	OMP Apr 2022	16.8	<0.05[#2]	-	6.35	***58.5***	-	17.8	-	**104**	3.2	<0.05[#2]	<0.05[#2]	3.34	25.7	<0.05[#2]	**7.46**	5.33	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW201	OCA	04 Nov 2022	0207_MW201_221025	OMP Oct 2022	26.5	<0.24[#2]	-	10.1	***63.0***	-	28.3	-	**147**	5.9	<0.24[#2]	<0.24[#2]	5.20	43.0	<0.24[#2]	**9.20**	9.15	<0.60[#2]	<0.24[#2]	<0.24[#2]	-
MW201	OCA	12 Apr 2023	0207_MW201_230412	OMP Apr 2023	37.8	<0.23[#2]	-	2.48	***2.31***	-	39.0	-	**184**	7.0	<0.23[#2]	<0.23[#2]	8.08	49.3	<0.23[#2]	**8.76**	10.4	<0.58[#2]	<0.23[#2]	<0.23[#2]	-
MW201	OCA	25 Oct 2023	0207_QC201_231025	OMP Oct 2023	12	<0.01	-	3	***2.3***	-	11	<0.01	**98**	2.5	<0.01	<0.01	2.7	17	<0.01	**5.7**	3.8	<0.02	<0.02	<0.01	<0.02
MW201	OCA	25 Oct 2023	0207_MW201_231025	OMP Oct 2023	16.4	<0.09[#2]	-	7.52	***4.89***	-	18.5	-	**134**	3.1	<0.09[#2]	<0.09[#2]	3.84	21.0	<0.09[#2]	**11.7**	5.82	<0.23[#2]	<0.09[#2]	<0.09[#2]	-
MW201	OCA	25 Oct 2023	0207_QC101_231025	OMP Oct 2023	19.8	<0.09[#2]	-	6.51	***5.66***	-	18.0	-	**128**	3.5	<0.09[#2]	<0.09[#2]	4.06	22.3	<0.09[#2]	**11.3**	5.92	<0.22[#2]	<0.09[#2]	<0.09[#2]	-
MW201	OCA	02 Apr 2024	0207_MW201_240402	OMP Apr 2024	9.34	<0.02	-	4.94	***4.09***	-	10.1	-	**67.9**	1.9	<0.02	<0.02	2.33	12.9	<0.02	**5.80**	3.07	<0.05	<0.02	<0.02	-
MW201	OCA	09 Oct 2024	0207_MW201_241009	OMP Oct 2024	10.6	<0.10[#2]	-	5.77	***15.1***	-	12.0	-	**73.8**	2.3	<0.10[#2]	<0.10[#2]	2.31	17.3	<0.10[#2]	**5.62**	4.00	<0.24[#2]	<0.10[#2]	<0.10[#2]	<0.24[#2]
MW202	OCA	23 Oct 2018	AACO-MW202-181023	OMP Oct 2018	24.4	<0.50[#2]	-	13.6	***164***	-	32.8	-	**199**	5.0	<0.50[#2]	<0.50[#2]	5.40	34.8	<0.50[#2]	**10.5**	8.00	<1.25[#2]	<0.50[#2]	<0.50[#2]	-
MW202	OCA	10 Jul 2019	0207_MW202_190710	OMP July 2019	35.6	<0.0200[#2]	-	16.8	***132***	-	37.0	-	**326**	2.43	<0.0200[#2]	<0.0200[#2]	5.11	48.9	0.0780	**13.6**	9.97	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW202	OCA	22 Oct 2019	0207_MW202_191022	OMP Oct 2019	3.94	<0.02	-	1.16	***9.25***	-	5.09	-	**32.3**	0.5	<0.02	<0.02	0.95	6.58	<0.02	**1.80**	1.41	<0.05	<0.02	<0.02	-
MW202	OCA	30 Oct 2019	0207_MW202_191030	OMP Oct 2019	33.2	<0.0005	-	11.4	***96.1***	-	26.9	-	**196**	1.75	0.0043	<0.0005	5.01	45.6	0.0720	**10.8**	7.91	<0.0005	<0.0005	<0.0005	-
MW202	OCA	05 Mar 2020	0207_MW202_200305	OMP Apr 2020	46.8	<0.160[#2]	-	81.1	***928***	-	65.4	-	**642**	1.25	<0.160[#2]	<0.160[#2]	11.5	70.0	0.432	***44.9***	15.6	<0.400[#2]	<0.160[#2]	<0.160[#2]	-
MW202	OCA	30 Mar 2020	0207_MW202_200330	OMP Apr 2020	12.4	<0.32[#2]	-	27.5	***884***	-	17.7	-	**143**	<1.6[#2]	<0.32[#2]	<0.32[#2]	3.72	20.2	0.58	**16.2**	4.74	<0.80[#2]	<0.32[#2]	<0.32[#2]	-
MW202	OCA	08 Apr 2020	0207_MW202_200408	OMP Apr 2020	11.6	<0.33[#2]	-	17.8	***744***	-	13.3	-	**116**	<1.6[#2]	<0.33[#2]	<0.33[#2]	3.30	20.8	0.49	**11.2**	4.76	<0.82[#2]	<0.33[#2]	<0.33[#2]	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW202	OCA	23 Oct 2020	0207_MW202_201023	OMP Oct 2020	7.78	<0.40[#2]	-	8.62	***282***	-	9.30	-	**80.3**	<2.0[#2]	<0.40[#2]	<0.40[#2]	2.48	16.5	<0.40[#2]	**6.87**	4.15	<1.00[#2]	<0.40[#2]	<0.40[#2]	-
MW202	OCA	17 Apr 2021	0207_MW202_210417	OMP Apr 2021	9.42	<0.37[#2]	-	7.07	***301***	-	10.2	-	**85.2**	2.5	<0.37[#2]	<0.37[#2]	2.71	17.2	<0.37[#2]	**7.51**	4.47	<0.92[#2]	<0.37[#2]	<0.37[#2]	-
MW202	OCA	12 Oct 2021	0207_MW202_211012	OMP Oct 2021	17.1	<0.24[#2]	-	8.28	***202***	-	17.5	-	**114**	3.6	<0.24[#2]	<0.24[#2]	4.26	31.1	0.26	**9.33**	6.60	<0.60[#2]	<0.24[#2]	<0.24[#2]	-
MW202	OCA	17 Apr 2022	0207_MW202_220417	OMP Apr 2022	10.8	<2.50[#2]	-	9.25	***475***	-	10.2	-	**100**	<12.5[#2]	<2.50[#2]	<2.50[#2]	<2.50[#2]	21.2	<2.50[#2]	**7.75**	4.00	<6.25[#2]	<2.50[#2]	<2.50[#2]	-
MW202	OCA	24 Oct 2022	0207_MW202_221024	OMP Oct 2022	6.74	<0.23[#2]	-	5.01	***165***	-	6.85	-	**56.5**	1.5	<0.23[#2]	<0.23[#2]	1.98	14.3	<0.23[#2]	**4.45**	3.00	<0.58[#2]	<0.23[#2]	<0.23[#2]	-
MW202	OCA	12 Apr 2023	0207_MW202_230412	OMP Apr 2023	8.63	<0.24[#2]	-	5.01	***108***	-	8.80	-	**63.0**	1.9	<0.24[#2]	<0.24[#2]	1.99	13.7	<0.24[#2]	**4.22**	3.21	<0.60[#2]	<0.24[#2]	<0.24[#2]	-
MW202	OCA	25 Oct 2023	0207_MW202_231025	OMP Oct 2023	7.49	<0.10[#2]	-	4.34	***99.7***	-	7.45	-	**71.4**	2.0	<0.10[#2]	<0.10[#2]	1.88	12.1	<0.10[#2]	**5.95**	3.65	<0.26[#2]	<0.10[#2]	<0.10[#2]	-
MW202	OCA	02 Apr 2024	0207_MW202_240402	OMP Apr 2024	11.9	0.13	-	7.87	***273***	-	12.0	-	**96.7**	2.4	0.02	<0.02	3.18	20.1	0.20	**8.53**	4.71	<0.05	<0.02	<0.02	-
MW202	OCA	09 Oct 2024	0207_MW202_241009	OMP Oct 2024	2.94	<0.42[#2]	-	2.35	***168***	-	3.90	-	**35.4**	<2.1[#2]	<0.42[#2]	<0.42[#2]	1.13	7.43	<0.42[#2]	**3.44**	1.68	<1.05[#2]	<0.42[#2]	<0.42[#2]	<1.05[#2]
MW203	OCA	10 Jul 2019	0207_MW203_190710	OMP July 2019	1.73	<0.0005	-	0.728	***6.22***	-	1.94	-	**11.7**	0.109	0.0007	<0.0005	0.481	2.87	0.0107	**0.863**	0.609	<0.0005	<0.0005	<0.0005	-
MW203	OCA	23 Oct 2019	0207_MW203_191023	OMP Oct 2019	0.08	<0.02	-	0.03	***0.58***	-	0.06	-	**0.49**	<0.1	<0.02	<0.02	0.02	0.10	<0.02	0.04	0.03	<0.05	<0.02	<0.02	-
MW203	OCA	30 Oct 2019	0207_MW203_191030	OMP Oct 2019	1.97	<0.0005	-	0.619	***4.81***	-	1.84	-	**11.1**	0.203	0.0006	<0.0005	0.446	3.39	0.0114	**0.871**	0.660	<0.0005	<0.0005	<0.0005	-
MW203	OCA	05 Mar 2020	0207_MW203_200305	OMP Apr 2020	1.75	<0.0016[#2]	-	0.909	***6.40***	-	1.88	-	**11.5**	0.086	<0.0016[#2]	<0.0016[#2]	0.530	3.46	0.0126	**0.980**	0.746	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW203	OCA	25 Mar 2020	0207_QC219_200325	OMP Apr 2020	1.9	<0.01	-	0.47	***5.1***	-	1.7	<0.01	**11**	0.51	<0.01	<0.01	0.53	3.5	0.012	**0.92**	0.75	<0.02	<0.02	<0.01	<0.02
MW203	OCA	25 Mar 2020	0207_MW203_200325	OMP Apr 2020	2.12	<0.06[#2]	-	0.71	***6.69***	-	2.04	-	**13.0**	<0.3[#2]	<0.06[#2]	<0.06[#2]	0.61	3.62	<0.06[#2]	**1.05**	0.77	<0.16[#2]	<0.06[#2]	<0.06[#2]	-
MW203	OCA	22 Oct 2020	0207_QC236_201022	OMP Oct 2020	1.5	<0.01	-	0.4	***4.3***	-	1.4	<0.01	**8.8**	0.4	<0.01	<0.01	0.44	2.2	0.015	**0.74**	0.62	<0.02	<0.02	<0.01	<0.02
MW203	OCA	22 Oct 2020	0207_MW203_201022	OMP Oct 2020	1.59	<0.04[#2]	-	0.62	***4.71***	-	1.82	-	**11.2**	0.3	<0.04[#2]	<0.04[#2]	0.56	3.15	<0.04[#2]	**0.89**	0.62	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW203	OCA	22 Oct 2020	0207_QC136_201022	OMP Oct 2020	1.67	<0.04[#2]	-	0.69	***5.81***	-	1.87	-	**11.5**	<0.2[#2]	<0.04[#2]	<0.04[#2]	0.56	3.34	<0.04[#2]	**0.96**	0.68	<0.09[#2]	<0.04[#2]	<0.04[#2]	-
MW203	OCA	15 Apr 2021	0207_MW203_210415	OMP Apr 2021	2.25	<0.18[#2]	-	0.72	***8.04***	-	2.34	-	**11.8**	<0.9[#2]	<0.18[#2]	<0.18[#2]	0.63	3.66	<0.18[#2]	**1.14**	0.92	<0.45[#2]	<0.18[#2]	<0.18[#2]	-
MW203	OCA	12 Oct 2021	0207_MW203_211012	OMP Oct 2021	1.83	<0.02	-	0.83	***6.46***	-	1.92	-	**11.0**	0.4	<0.02	<0.02	0.58	3.46	0.02	**1.00**	0.65	<0.05	<0.02	<0.02	-
MW203	OCA	17 Apr 2022	0207_MW203_220417	OMP Apr 2022	0.72	<0.02	-	0.07	***0.79***	-	0.79	-	**6.49**	0.3	<0.02	<0.02	0.25	1.29	<0.02	0.17	0.51	<0.05	<0.02	<0.02	-
MW203	OCA	24 Oct 2022	0207_MW203_221024	OMP Oct 2022	0.60	<0.02	-	0.29	***0.90***	-	0.67	-	**5.66**	0.2	<0.02	<0.02	0.15	1.25	<0.02	0.21	0.33	<0.05	<0.02	<0.02	-
MW203	OCA	12 Apr 2023	0207_MW203_230412	OMP Apr 2023	1.00	<0.02	-	0.16	***0.85***	-	1.28	-	**10.0**	0.3	<0.02	<0.02	0.30	1.58	<0.02	0.28	0.47	<0.06[#2]	<0.02	<0.02	-
MW203	OCA	24 Oct 2023	0207_MW203_231024	OMP Oct 2023	1.11	<0.02	-	0.13	***0.62***	-	1.20	-	**7.94**	0.3	<0.02	<0.02	0.23	1.31	<0.02	0.24	0.50	<0.05	<0.02	<0.02	-
MW203	OCA	02 Apr 2024	0207_MW203_240402	OMP Apr 2024	0.64	<0.02	-	0.10	***0.56***	-	0.64	-	**4.54**	0.2	<0.02	<0.02	0.12	0.97	<0.02	0.13	0.28	<0.05	<0.02	<0.02	-
MW203	OCA	09 Oct 2024	0207_MW203_241009	OMP Oct 2024	1.00	<0.02	-	0.09	***0.67***	-	0.86	-	**4.41**	0.2	<0.02	<0.02	0.14	1.38	<0.02	0.11	0.40	<0.05	<0.02	<0.02	<0.05
MW204	OCA	23 Oct 2018	AACO_QC204_181023	OMP Oct 2018	87	<0.01	-	23	***110***	-	81	0.018	**500**	17	<0.01	<0.01	13	110	0.065	***21***	22	<0.02	<0.02	<0.01	<0.02
MW204	OCA	23 Oct 2018	AACO-MW204-181023	OMP Oct 2018	77.8	<0.50[#2]	-	30.2	***123***	-	127	-	**532**	17.4	<0.50[#2]	<0.50[#2]	13.3	110	<0.50[#2]	***20.6***	30.7	<1.25[#2]	<0.50[#2]	<0.50[#2]	-
MW204	OCA	23 Oct 2018	AACO-QC104-181023	OMP Oct 2018	109	<1.00[#2]	-	31.3	***157***	-	127	-	**648**	19.4	<1.00[#2]	<1.00[#2]	17.4	125	<1.00[#2]	***26.8***	28.7	<2.50[#2]	<1.00[#2]	<1.00[#2]	-
MW204	OCA	10 Jul 2019	0207_MW204_190710	OMP July 2019	40.0	<0.0200[#2]	-	7.62	***49.9***	-	37.1	-	**193**	2.82	<0.0200[#2]	<0.0200[#2]	5.86	52.3	<0.0200[#2]	**10.1**	12.6	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW204	OCA	22 Oct 2019	0207_MW204_191022	OMP Oct 2019	43.5	<0.02	-	3.48	***17.9***	-	36.6	-	**166**	15.0	<0.02	<0.02	6.74	53.2	0.02	**7.34**	11.7	<0.05	<0.02	<0.02	-
MW204	OCA	22 Oct 2019	0207_QC101_191022	OMP Oct 2019	48.2	<0.02	-	4.00	***22.5***	-	40.3	-	**181**	12.5	<0.02	<0.02	6.82	59.7	<0.02	**7.48**	13.4	<0.05	<0.02	<0.02	-
MW204	OCA	22 Oct 2019	0207_QC201_191022	OMP Oct 2019	41	<0.01	-	2.5	***23***	-	33	<0.01	**180**	8.5	<0.01	<0.01	5.9	54	0.012	**6.7**	12	<0.02	<0.02	<0.01	<0.02
MW204	OCA	30 Oct 2019	0207_MW204_191030	OMP Oct 2019	34.8	<0.0005	-	2.91	***15.2***	-	26.9	-	**139**	2.12	0.0006	<0.0005	4.69	49.3	0.0131	**5.20**	8.81	<0.0005	<0.0005	<0.0005	-
MW204	OCA	05 Mar 2020	0207_MW204_200305	OMP Apr 2020	10.8	<0.0160[#2]	-	5.90	***15.9***	-	17.3	-	**102**	0.261	<0.0160[#2]	<0.0160[#2]	2.71	16.1	<0.0160[#2]	**5.56**	3.27	<0.0400[#2]	<0.0160[#2]	<0.0160[#2]	-
MW204	OCA	25 Mar 2020	0207_MW204_200325	OMP Apr 2020	25.8	<0.32[#2]	-	4.02	***16.6***	-	23.9	-	**134**	<1.6[#2]	<0.32[#2]	<0.32[#2]	4.75	32.4	<0.32[#2]	**5.41**	7.38	<0.79[#2]	<0.32[#2]	<0.32[#2]	-
MW204	OCA	22 Oct 2020	0207_MW204_201022	OMP Oct 2020	13.6	<0.20[#2]	-	4.67	***25.3***	-	16.2	-	**101**	1.5	<0.20[#2]	<0.20[#2]	3.93	21.8	<0.20[#2]	**6.12**	4.67	<0.50[#2]	<0.20[#2]	<0.20[#2]	-
MW204	OCA	17 Apr 2021	0207_MW204_210417	OMP Apr 2021	14.2	<0.38[#2]	-	3.77	***13.2***	-	15.6	-	**94.1**	3.0	<0.38[#2]	<0.38[#2]	3.43	20.5	<0.38[#2]	**5.90**	4.34	<0.95[#2]	<0.38[#2]	<0.38[#2]	-
MW204	OCA	12 Oct 2021	0207_MW204_211012	OMP Oct 2021	16.9	<0.10[#2]	-	7.07	***17.0***	-	24.3	-	**140**	3.0	<0.10[#2]	<0.10[#2]	4.81	27.0	<0.10[#2]	**8.14**	4.58	<0.25[#2]	<0.10[#2]	<0.10[#2]	-
MW204	OCA	20 Apr 2022	0207_MW204_220420	OMP Apr 2022	22.0	<0.50[#2]	-	6.15	***25.2***	-	25.6	-	**175**	<2.5[#2]	<0.50[#2]	<0.50[#2]	5.35	30.6	<0.50[#2]	**10.6**	6.85	<1.25[#2]	<0.50[#2]	<0.50[#2]	-
MW204	OCA	24 Oct 2022	0207_MW204_221024	OMP Oct 2022	30.4	<0.43[#2]	-	14.8	***43.9***	-	35.0	-	**263**	6.2	<0.43[#2]	<0.43[#2]	8.63	55.6	<0.43[#2]	***21.6***	9.24	<1.08[#2]	<0.43[#2]	<0.43[#2]	-
MW204	OCA	12 Apr 2023	0207_MW204_230412	OMP Apr 2023	77.2	<0.90[#2]	-	40.3	***118***	-	86.7	-	**549**	13.1	<0.90[#2]	<0.90[#2]	18.9	104	<0.90[#2]	***41.5***	21.9	<2.25[#2]	<0.90[#2]	<0.90[#2]	-
MW204	OCA	12 Apr 2023	0207_QC104_230412	OMP Apr 2023	69.0	<0.83[#2]	-	40.2	***146***	-	93.8	-	**558**	15.0	<0.83[#2]	<0.83[#2]	18.0	98.4	<0.83[#2]	***39.7***	19.8	<2.08[#2]	<0.83[#2]	<0.83[#2]	-
MW204	OCA	12 Apr 2023	0207_QC204_230412	OMP Apr 2023	52	<0.01	-	21	***71***	-	59	<0.01	**330**	10	<0.01	<0.01	11	63	0.071	***24***	14	<0.02	<0.02	<0.01	<0.02
MW204	OCA	24 Oct 2023	0207_MW204_231024	OMP Oct 2023	134	<0.50[#2]	-	58.2	***575***	-	142	-	**925**	22.8	<0.50[#2]	<0.50[#2]	23.2	136	<0.50[#2]	***62.4***	35.8	<1.25[#2]	<0.50[#2]	<0.50[#2]	-
MW204	OCA	02 Apr 2024	0207_MW204_240402	OMP Apr 2024	71.1	<0.02	-	28.6	***302***	-	86.7	-	**596**	14.6	<0.02	<0.02	15.6	93.6	0.21	***31.9***	20.9	<0.05	<0.02	<0.02	-
MW204	OCA	09 Oct 2024	0207_QC202_241009	OMP Oct 2024	110	<0.1[#3]	<0.1[#3]	53[#1]	***300[#1]***	58	110[#1]	-	**790[#1]**	21	<0.01	<0.01	16[#1]	170	0.26[#1]	***46[#1]***	41	<0.01	<0.01	<0.01	-
MW204	OCA	09 Oct 2024	0207_QC102_241009	OMP Oct 2024	120	<5.00[#2]	-	40.5	***310***	-	122	-	**712**	<250[#2]	<5.00[#2]	<5.00[#2]	21.5	142	<5.00[#2]	***39.5***	32.5	<12.5[#2]	<5.00[#2]	<5.00[#2]	<12.5[#2]
MW204	OCA	09 Oct 2024	0207_MW204_241009	OMP Oct 2024	116	<5.00[#2]	-	37.5	***338***	-	111	-	**712**	28.5	<5.00[#2]	<5.00[#2]	21.0	146	<5.00[#2]	***41.0***	33.0	<12.5[#2]	<5.00[#2]	<5.00[#2]	<12.5[#2]
MW205	OCA	23 Oct 2018	AACO-MW205-181023	OMP Oct 2018	1.56	<0.02	-	0.52	***5.77***	-	1.40	-	**8.75**	0.4	<0.02	<0.02	0.34	2.17	<0.02	**0.60**	0.48	<0.05	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW205	OCA	10 Jul 2019	0207_MW205_190710	OMP July 2019	1.57	<0.0005	-	0.513	***4.66***	-	1.77	-	**9.08**	0.088	0.0008	<0.0005	0.371	2.25	0.0099	**0.584**	0.449	<0.0005	<0.0005	<0.0005	-
MW205	OCA	22 Oct 2019	0207_QC202_191022	OMP Oct 2019	1.7	<0.01	-	0.39	***3.3***	-	1.5	<0.01	**9.2**	0.47	<0.01	<0.01	0.40	2.3	<0.01	**0.57**	0.57	<0.02	<0.02	<0.01	<0.02
MW205	OCA	22 Oct 2019	0207_MW205_191022	OMP Oct 2019	1.90	<0.02	-	0.45	***3.88***	-	2.06	-	**11.4**	0.3	<0.02	<0.02	0.49	2.93	<0.02	**0.67**	0.61	<0.05	<0.02	<0.02	-
MW205	OCA	22 Oct 2019	0207_QC102_191022	OMP Oct 2019	1.72	<0.02	-	0.42	***3.94***	-	2.07	-	**11.4**	0.3	<0.02	<0.02	0.46	2.74	<0.02	**0.65**	0.58	<0.05	<0.02	<0.02	-
MW205	OCA	30 Oct 2019	0207_MW205_191030	OMP Oct 2019	2.20	<0.0005	-	0.488	***3.67***	-	1.91	-	**9.73**	0.237	0.0009	<0.0005	0.392	3.11	0.0113	**0.640**	0.803	<0.0005	<0.0005	<0.0005	-
MW205	OCA	05 Mar 2020	0207_MW205_200305	OMP Apr 2020	1.97	<0.0016[#2]	-	0.781	***4.91***	-	2.00	-	**11.4**	0.098	<0.0016[#2]	<0.0016[#2]	0.458	2.89	0.0114	**0.702**	0.606	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW205	OCA	26 Mar 2020	0207_MW205_200326	OMP Apr 2020	2.08	<0.03[#2]	-	0.62	***5.89***	-	2.24	-	**11.5**	0.2	<0.03[#2]	<0.03[#2]	0.51	3.02	<0.03[#2]	**0.76**	0.64	<0.08[#2]	<0.03[#2]	<0.03[#2]	-
MW205	OCA	22 Oct 2020	0207_MW205_201022	OMP Oct 2020	1.41	<0.04[#2]	-	0.52	***5.72***	-	1.50	-	**8.79**	<0.2[#2]	<0.04[#2]	<0.04[#2]	0.40	2.38	<0.04[#2]	**0.62**	0.51	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW205	OCA	17 Apr 2021	0207_MW205_210417	OMP Apr 2021	1.39	<0.02	-	0.50	***5.58***	-	1.50	-	**8.60**	0.33	<0.02	<0.02	0.43	2.28	<0.02	**0.65**	0.53	<0.05	<0.02	<0.02	-
MW205	OCA	12 Oct 2021	0207_MW205_211012	OMP Oct 2021	1.24	<0.02	-	0.52	***6.17***	-	1.31	-	**7.61**	0.3	<0.02	<0.02	0.37	2.25	0.02	**0.60**	0.42	<0.05	<0.02	<0.02	-
MW205	OCA	14 Apr 2022	0207_MW205_220420	OMP Apr 2022	1.00	<0.02	-	0.40	***5.96***	-	1.11	-	**6.85**	0.2	<0.02	<0.02	0.31	1.78	<0.02	0.56	0.41	<0.05	<0.02	<0.02	-
MW205	OCA	24 Oct 2022	0207_MW205_221024	OMP Oct 2022	9.29	<0.24[#2]	-	0.38	***1.04***	-	9.78	-	**42.1**	2.1	<0.24[#2]	<0.24[#2]	1.84	18.8	<0.24[#2]	0.54	4.82	<0.59[#2]	<0.24[#2]	<0.24[#2]	-
MW205	OCA	12 Apr 2023	0207_MW205_230412	OMP Apr 2023	3.14	<0.02	-	1.18	***7.54***	-	2.80	-	**18.5**	0.8	<0.02	<0.02	0.48	4.73	<0.02	**1.03**	1.36	<0.06[#2]	<0.02	<0.02	-
MW205	OCA	24 Oct 2023	0207_MW205_231024	OMP Oct 2023	1.93	<0.02	-	0.90	***10.5***	-	1.74	-	**10.1**	0.5	<0.02	<0.02	0.25	2.16	<0.02	**0.62**	0.83	<0.05	<0.02	<0.02	-
MW205	OCA	02 Apr 2024	0207_QC200_240402	OMP Apr 2024	1.6	<0.01	-	0.11	***2.9***	-	1.3	<0.01	**5.2**	0.35	<0.01	<0.01	0.18	1.6	<0.01	0.13	0.53	<0.02	<0.02	<0.01	<0.02
MW205	OCA	02 Apr 2024	0207_QC100_240402	OMP Apr 2024	1.29	<0.02	-	0.18	***4.98***	-	1.28	-	**6.60**	0.3	<0.02	<0.02	0.23	2.46	<0.02	0.18	0.66	<0.05	<0.02	<0.02	-
MW205	OCA	02 Apr 2024	0207_MW205_240402	OMP Apr 2024	1.44	<0.02	-	0.19	***5.56***	-	1.38	-	**6.74**	0.3	<0.02	<0.02	0.22	2.22	<0.02	0.17	0.60	<0.05	<0.02	<0.02	-
MW205	OCA	09 Oct 2024	0207_MW205_241009	OMP Oct 2024	2.20	<0.05[#2]	-	<0.26[#2]	***2.98***	-	2.16	-	**10.7**	0.5	<0.05[#2]	<0.05[#2]	0.31	3.33	<0.05[#2]	0.27	0.96	<0.13[#2]	<0.05[#2]	<0.05[#2]	<0.13[#2]
MW207	OCA	06 Nov 2019	0207_MW207_191106	OMP Oct 2019	0.02	<0.02	-	<0.02	***0.02***	-	0.03	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW207	OCA	17 Apr 2022	0207_MW207_220417	OMP Apr 2022	<0.04[#2]	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW207	OCA	25 Oct 2022	0207_MW207_221025	OMP Oct 2022	0.11	<0.02	-	0.06	***0.42***	-	0.12	-	**0.93**	<0.1	<0.02	<0.02	0.05	0.18	<0.02	0.07	0.06	<0.05	<0.02	<0.02	-
MW207	OCA	12 Apr 2023	0207_MW207_230412	OMP Apr 2023	0.19	<0.02	-	0.10	***0.69***	-	0.23	-	**1.46**	<0.1	<0.02	<0.02	0.08	0.23	<0.02	0.09	0.10	<0.05	<0.02	<0.02	-
MW207	OCA	25 Oct 2023	0207_MW207_231025	OMP Oct 2023	0.18	<0.02	-	0.06	***0.84***	-	0.18	-	**1.42**	<0.1	<0.02	<0.02	0.06	0.16	<0.02	0.08	0.09	<0.05	<0.02	<0.02	-
MW207	OCA	02 Apr 2024	0207_MW207_240402	OMP Apr 2024	0.12	<0.02	-	0.04	***0.62***	-	0.12	-	**0.97**	<0.1	<0.02	<0.02	0.05	0.14	<0.02	0.04	0.06	<0.05	<0.02	<0.02	-
MW207	OCA	10 Oct 2024	0207_MW207_241010	OMP Oct 2024	0.18	<0.02	-	<0.06[#2]	***0.84***	-	0.17	-	**1.21**	<0.2[#2]	<0.02	<0.02	0.05	0.16	<0.02	0.05	0.06	<0.05	<0.02	<0.02	<0.05
MW221	OCA	20 Oct 2018	AACO-MWC2-I-181020	OMP Oct 2018	0.36	<0.02	-	0.15	***2.07***	-	0.34	-	**1.88**	0.2	<0.02	<0.02	0.27	0.86	<0.02	0.39	0.29	<0.05	<0.02	<0.02	-
MW221	OCA	11 Jul 2019	0207_MWC2-I_190711	OMP July 2019	0.257	<0.0005	-	0.117	***1.60***	-	0.267	-	**1.48**	0.045	<0.0005	<0.0005	0.177	0.617	0.0082	0.248	0.197	<0.0005	<0.0005	<0.0005	-
MW221	OCA	23 Oct 2019	0207_MW221_191023	OMP Oct 2019	0.32	<0.02	-	0.14	***1.65***	-	0.35	-	**2.07**	0.1	<0.02	<0.02	0.22	0.86	<0.02	0.32	0.23	<0.05	<0.02	<0.02	-
MW221	OCA	30 Oct 2019	0207_MWC2-I_191030	OMP Oct 2019	0.347	<0.0005	-	0.129	***1.72***	-	0.280	-	**1.74**	0.068	<0.0005	<0.0005	0.180	0.855	0.0113	0.316	0.213	<0.0005	<0.0005	<0.0005	-
MW221	OCA	05 Mar 2020	0207_MWC2-I_200305	OMP Apr 2020	0.317	<0.0016[#2]	-	0.182	***2.23***	-	0.382	-	**1.94**	0.026	<0.0016[#2]	<0.0016[#2]	0.167	0.746	0.0088	0.325	0.212	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW221	OCA	25 Mar 2020	0207_MW221_200325	OMP Apr 2020	0.39	<0.03[#2]	-	0.18	***2.25***	-	0.42	-	**2.30**	<0.2[#2]	<0.03[#2]	<0.03[#2]	0.23	0.95	<0.03[#2]	0.35	0.28	<0.08[#2]	<0.03[#2]	<0.03[#2]	-
MW221	OCA	19 Oct 2020	0207_MW221_201019	OMP Oct 2020	0.40	<0.02	-	0.19	***2.73***	-	0.40	-	**2.16**	0.18	<0.02	<0.02	0.28	1.04	<0.02	0.42	0.30	<0.05	<0.02	<0.02	-
MW221	OCA	14 Apr 2021	0207_MW221_210414	OMP Apr 2021	0.35	<0.02	-	0.12	***1.71***	-	0.34	-	**1.69**	0.2	<0.02	<0.02	0.25	0.92	<0.02	0.36	0.28	<0.05	<0.02	<0.02	-
MW221	OCA	12 Oct 2021	0207_QC257_21012	OMP Oct 2021	0.33	<0.01	-	0.081	***1.1***	-	0.31	<0.01	**1.7**	0.14	<0.01	<0.01	0.2	0.71	<0.01	0.29	0.21	<0.02	<0.02	<0.01	<0.02
MW221	OCA	12 Oct 2021	0207_QC157_211012	OMP Oct 2021	0.40	<0.02	-	0.20	***1.68***	-	0.48	-	**2.26**	0.2	<0.02	<0.02	0.28	1.04	<0.02	0.42	0.26	<0.05	<0.02	<0.02	-
MW221	OCA	12 Oct 2021	0207_MW221_211012	OMP Oct 2021	0.42	<0.02	-	0.18	***1.83***	-	0.42	-	**2.04**	0.2	<0.02	<0.02	0.26	1.11	<0.02	0.38	0.25	<0.05	<0.02	<0.02	-
MW221	OCA	17 Apr 2022	0207_MW221_220417	OMP Apr 2022	0.33	<0.02	-	0.16	***2.34***	-	0.29	-	**1.70**	0.1	<0.02	<0.02	0.21	0.88	<0.02	0.37	0.24	<0.05	<0.02	<0.02	-
MW221	OCA	25 Oct 2022	0207_MW221_221025	OMP Oct 2022	0.36	<0.02	-	0.22	***2.28***	-	0.41	-	**2.03**	0.2	<0.02	<0.02	0.25	1.12	<0.02	0.39	0.24	<0.05	<0.02	<0.02	-
MW221	OCA	12 Apr 2023	0207_MW221_230412	OMP Apr 2023	0.38	<0.02	-	0.19	***2.09***	-	0.37	-	**1.85**	0.1	<0.02	<0.02	0.23	0.87	<0.02	0.38	0.24	<0.05	<0.02	<0.02	-
MW221	OCA	25 Oct 2023	0207_MW221_231025	OMP Oct 2023	0.46	<0.02	-	0.16	***2.24***	-	0.37	-	**2.06**	0.2	<0.02	<0.02	0.23	0.82	<0.02	0.40	0.28	<0.05	<0.02	<0.02	-
MW221	OCA	02 Apr 2024	0207_MW221_240402	OMP Apr 2024	0.25	<0.02	-	0.10	***1.75***	-	0.24	-	**1.45**	0.1	<0.02	<0.02	0.18	0.63	<0.02	0.26	0.19	<0.05	<0.02	<0.02	-
MW221	OCA	09 Oct 2024	0207_MW221_241009	OMP Oct 2024	0.36	<0.02	-	0.15	***2.04***	-	0.36	-	**1.95**	<0.2[#2]	<0.02	<0.02	0.20	0.80	<0.04[#2]	0.32	0.26	<0.05	<0.02	<0.02	<0.05
MW222	OCA	20 Oct 2018	AACO-MWC2-K-181020	OMP Oct 2018	1.73	<0.03[#2]	-	1.2	***26***	-	1.54	-	**10.5**	1.6	0.09	<0.02	3.33	6.88	1.29	**5.45**	3.7	<0.05	<0.02	<0.02	-
MW222	OCA	11 Jul 2019	0207_MWC2-K_190711	OMP July 2019	1.32	<0.0200[#2]	-	0.950	***15.8***	-	1.45	-	**9.19**	0.464	0.0260	<0.0200[#2]	2.11	5.82	0.890	**4.52**	3.04	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW222	OCA	11 Jul 2019	0207_QC1MW_190711	OMP July 2019	1.39	<0.0200[#2]	-	1.01	***16.8***	-	1.46	-	**9.12**	0.438	0.0320	<0.0200[#2]	2.52	6.19	0.996	**4.45**	3.13	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW222	OCA	23 Oct 2019	0207_MW222_191023	OMP Oct 2019	1.66	<0.02	-	1.02	***14.8***	-	1.88	-	**13.6**	1.4	0.03	<0.02	3.52	7.93	0.89	**5.31**	3.80	<0.05	<0.02	<0.02	-
MW222	OCA	30 Oct 2019	0207_MWC2-K_191030	OMP Oct 2019	1.75	0.0066	-	0.973	***9.19***	-	1.71	-	**9.31**	0.547	0.0194	<0.0005	2.47	7.20	0.641	**4.49**	3.53	<0.0005	<0.0005	<0.0005	-
MW222	OCA	05 Mar 2020	0207_MWC2-K_200305	OMP Apr 2020	1.63	<0.0016[#2]	-	1.48	***16.2***	-	2.09	-	**10.4**	0.307	0.0309	<0.0016[#2]	2.98	7.21	0.988	**4.93**	3.77	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW222	OCA	25 Mar 2020	0207_MW222_200325	OMP Apr 2020	1.81	<0.06[#2]	-	1.35	***19.4***	-	1.89	-	**12.0**	0.9	<0.06[#2]	<0.06[#2]	3.58	7.18	1.18	**5.56**	3.66	<0.16[#2]	<0.06[#2]	<0.06[#2]	-
MW222	OCA	19 Oct 2020	0207_MW222_201019	OMP Oct 2020	1.67	<0.10[#2]	-	1.17	***14.6***	-	1.95	-	**12.1**	1.40	<0.10[#2]	<0.10[#2]	3.76	8.54	0.86	**5.28**	4.71	<0.25[#2]	<0.10[#2]	<0.10[#2]	-
MW222	OCA	14 Apr 2021	0207_MW222_210414	OMP Apr 2021	2.17	<0.10[#2]	-	1.51	***23.6***	-	2.34	-	**14.4**	2.27	<0.10[#2]	<0.10[#2]	4.62	9.84	1.33	**6.37**	5.65	<0.25[#2]	<0.10[#2]	<0.10[#2]	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW222	OCA	12 Oct 2021	0207_QC258_21012	OMP Oct 2021	1.4	<0.01	-	0.88	***11***	-	1.3	<0.01	**8.8**	1.9	0.015	<0.01	3.1	6.1	0.84	**4.6**	4	<0.02	<0.02	<0.01	<0.02
MW222	OCA	12 Oct 2021	0207_MW222_211012	OMP Oct 2021	1.82	<0.05[#2]	-	1.44	***15.6***	-	1.94	-	**12.3**	2.0	<0.05[#2]	<0.05[#2]	4.17	9.61	0.88	**5.83**	5.00	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW222	OCA	12 Oct 2021	0207_QC158_211012	OMP Oct 2021	1.72	<0.02	-	1.61	***17.9***	-	2.02	-	**12.5**	2.1	0.02	<0.02	4.35	9.38	1.04	**6.80**	5.06	<0.05	<0.02	<0.02	-
MW222	OCA	17 Apr 2022	0207_QC206_220417	OMP Apr 2022	0.73	<0.01	-	0.7	***12***	-	0.71	<0.01	**4.6**	1.2	0.039	<0.01	1.6	3.7	1.2	**3**	1.6	<0.02	<0.02	<0.01	<0.02
MW222	OCA	17 Apr 2022	0207_MW222_220417	OMP Apr 2022	0.74	<0.05[#2]	-	0.60	***15.9***	-	0.70	-	**5.34**	1.0	<0.05[#2]	<0.05[#2]	1.76	3.80	0.75	**3.14**	2.49	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW222	OCA	17 Apr 2022	0207_QC106_220417	OMP Apr 2022	0.70	<0.02	-	0.93	***17.7***	-	0.85	-	**5.49**	1.1	0.03	<0.02	2.02	3.67	0.76	**3.10**	2.14	<0.05	<0.02	<0.02	-
MW222	OCA	26 Oct 2022	0207_MW222_221026	OMP Oct 2022	0.57	<0.02	-	0.47	***13.7***	-	0.47	-	**3.71**	0.6	0.02	<0.02	1.02	2.17	0.48	**1.70**	1.32	<0.06[#2]	<0.02	<0.02	-
MW222	OCA	12 Apr 2023	0207_MW222_230412	OMP Apr 2023	0.47	<0.02	-	0.54	***15.2***	-	0.55	-	**3.77**	0.5	0.04	<0.02	0.87	1.78	0.47	**1.36**	1.24	<0.05	<0.02	<0.02	-
MW222	OCA	25 Oct 2023	0207_MW222_231025	OMP Oct 2023	0.68	<0.02	-	0.46	***17.3***	-	0.57	-	**4.31**	0.7	0.03	<0.02	1.00	1.83	0.52	**1.72**	1.60	<0.05	<0.02	<0.02	-
MW222	OCA	03 Apr 2024	0207_MW222_240403	OMP Apr 2024	0.41	<0.02	-	0.42	***14.9***	-	0.43	-	**3.21**	0.6	0.03	<0.02	0.88	1.73	0.40	**1.30**	1.33	<0.05	<0.02	<0.02	-
MW223	OCA	22 Oct 2018	AACO-MWC2-L-181022	OMP Oct 2018	0.94	<0.02	-	0.54	***8.02***	-	0.82	-	**5.86**	4.1	0.04	<0.02	5.74	11.4	1.66	**8.24**	19.2	<0.05	<0.02	<0.02	-
MW223	OCA	11 Jul 2019	0207_MWC2-L_190711	OMP July 2019	0.761	0.0028	-	0.455	***6.86***	-	0.925	-	**5.87**	1.22	0.0349	<0.0005	4.16	8.73	1.35	**6.07**	16.3	<0.0005	<0.0005	<0.0005	-
MW223	OCA	23 Oct 2019	0207_MWC2-L_190711	OMP Oct 2019	0.97	<0.02	-	0.72	***18.5***	-	1.11	-	**8.90**	3.7	0.10	<0.02	6.44	11.5	2.51	**8.50**	22.7	<0.05	<0.02	<0.02	-
MW223	OCA	31 Oct 2019	0207_MWC2-L_191031	OMP Oct 2019	0.965	0.0186	-	0.591	***7.46***	-	1.07	-	**7.05**	1.52	0.0401	<0.0005	4.60	10.7	1.49	**6.45**	19.4	<0.0005	<0.0005	<0.0005	-
MW223	OCA	05 Mar 2020	0207_QC1MW_200305_2	OMP Apr 2020	1.23	<0.0016[#2]	-	0.677	***7.69***	-	0.913	-	**6.17**	0.926	0.0446	<0.0016[#2]	5.44	8.80	1.48	**6.03**	18.7	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW223	OCA	05 Mar 2020	0207_MWC2-L_200305	OMP Apr 2020	1.04	<0.0016[#2]	-	0.900	***9.90***	-	1.10	-	**8.59**	0.829	0.0301	<0.0016[#2]	5.94	11.8	1.75	**7.95**	22.8	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW223	OCA	25 Mar 2020	0207_MW223_200325	OMP Apr 2020	1.23	<0.06[#2]	-	0.94	***13.2***	-	1.33	-	**9.96**	2.6	<0.06[#2]	<0.06[#2]	6.59	11.8	2.13	**8.57**	22.8	<0.16[#2]	<0.06[#2]	<0.06[#2]	-
MW223	OCA	19 Oct 2020	0207_MW223_201019	OMP Oct 2020	1.02	<0.04[#2]	-	0.80	***15.0***	-	1.11	-	**8.66**	5.8	0.06	<0.04[#2]	7.69	13.3	2.14	**8.44**	28.7	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW223	OCA	14 Apr 2021	0207_MW223_210414	OMP Apr 2021	1.22	<0.07[#2]	-	0.97	***18.6***	-	1.29	-	**8.92**	6.4	<0.07[#2]	<0.07[#2]	10.2	15.1	2.24	**9.72**	37.4	<0.18[#2]	<0.07[#2]	<0.07[#2]	-
MW223	OCA	12 Oct 2021	0207_MW223_211012	OMP Oct 2021	0.98	<0.02	-	0.86	***14.6***	-	1.11	-	**8.89**	8.9	0.05	<0.02	13.1	18.7	2.23	**11.0**	40.8	<0.06[#2]	<0.02	<0.02	-
MW223	OCA	13 Apr 2022	0207_MW223_220413	OMP Apr 2022	0.77	<0.05[#2]	-	0.62	***14.8***	-	0.78	-	**6.40**	6.1	<0.05[#2]	<0.05[#2]	16.4	14.2	3.04	**10.2**	30.9	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW223	OCA	13 Apr 2022	0207_QC200_220413	OMP Apr 2022	0.71	<0.01	-	0.82	***15***	-	0.78	0.014	**5.4**	4.7	0.013	<0.01	15	14	3.2	**5.1**	22	<0.02	<0.02	<0.01	<0.02
MW223	OCA	13 Apr 2022	0207_QC100_220413	OMP Apr 2022	0.68	<0.02	-	1.01	***18.0***	-	1.02	-	**7.26**	6.2	0.03	<0.02	14.3	12.7	2.97	**10.0**	23.3	<0.05	<0.02	<0.02	-
MW223	OCA	26 Oct 2022	0207_MW223_221026	OMP Oct 2022	0.50	<0.05[#2]	-	0.74	***14.6***	-	0.61	-	**5.95**	4.7	0.05	<0.05[#2]	11.6	14.5	2.30	**8.86**	18.8	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW223	OCA	12 Apr 2023	0207_MW223_230412	OMP Apr 2023	0.41	<0.02	-	0.77	***13.7***	-	0.43	-	**3.29**	5.3	0.06	<0.02	9.01	10.8	1.98	**5.18**	18.5	<0.05	<0.02	<0.02	-
MW223	OCA	25 Oct 2023	0207_MW223_231025	OMP Oct 2023	0.75	<0.02	-	0.21	***10.2***	-	0.52	-	**3.55**	6.9	0.07	<0.02	9.62	12.8	0.24	**5.20**	32.5	<0.05	<0.02	<0.02	-
MW223	OCA	25 Oct 2023	0207_QC102_231025	OMP Oct 2023	0.79	<0.02	-	0.30	***10.8***	-	0.76	-	**4.34**	7.7	0.07	<0.02	9.84	14.6	0.28	**6.36**	30.6	<0.05	<0.02	<0.02	-
MW223	OCA	25 Oct 2023	0207_QC202_231025	OMP Oct 2023	0.61	<0.01	-	0.18	***7.6***	-	0.55	<0.01	**2.6**	4.7	0.063	<0.01	8	10	0.22	**3.2**	22	<0.02	<0.02	<0.01	<0.02
MW223	OCA	03 Apr 2024	0207_MW223_240403	OMP Apr 2024	0.54	<0.02	-	0.50	***12.2***	-	0.65	-	**5.16**	4.6	0.04	<0.02	10.0	12.9	0.81	**5.90**	26.6	<0.05	<0.02	<0.02	-
MW229	OCA	22 Oct 2018	AACO-MWC3-I-181022	OMP Oct 2018	0.99	<0.02	-	0.58	***17.4***	-	1.38	-	**8.58**	0.2	<0.02	<0.02	0.24	2.40	<0.02	**0.57**	0.41	<0.05	<0.02	<0.02	-
MW229	OCA	11 Jul 2019	0207_MWC3-I_190711	OMP July 2019	0.382	<0.0200[#2]	-	0.264	***17.8***	-	0.452	-	**3.82**	<0.020[#2]	<0.0200[#2]	<0.0200[#2]	0.0540	0.842	<0.0200[#2]	0.246	0.146	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW229	OCA	22 Oct 2019	0207_MW229_191022	OMP Oct 2019	0.61	<0.02	-	0.43	***24.5***	-	0.74	-	**6.24**	0.1	<0.02	<0.02	0.14	1.41	<0.02	0.39	0.26	<0.05	<0.02	<0.02	-
MW229	OCA	22 Oct 2019	0207_QC104_191022	OMP Oct 2019	0.59	<0.02	-	0.44	***26.2***	-	0.78	-	**6.56**	0.3	<0.02	<0.02	0.14	1.36	<0.02	0.40	0.26	<0.05	<0.02	<0.02	-
MW229	OCA	22 Oct 2019	0207_QC204_191022	OMP Oct 2019	0.54	<0.01	-	0.32	***30***	-	0.62	<0.01	**5.7**	0.15	<0.01	<0.01	0.12	1.2	<0.01	0.33	0.23	<0.02	<0.02	<0.01	<0.02
MW229	OCA	30 Oct 2019	0207_MWC3-I_191030	OMP Oct 2019	0.657	0.0056	-	0.360	***22.2***	-	0.574	-	**5.78**	0.052	0.0016	<0.0005	0.134	1.43	0.0040	0.371	0.222	<0.0005	<0.0005	<0.0005	-
MW229	OCA	05 Mar 2020	0207_MWC3-I_200305	OMP Apr 2020	0.504	<0.0016[#2]	-	0.312	***17.8***	-	0.644	-	**4.81**	0.018	<0.0016[#2]	<0.0016[#2]	0.0955	1.09	0.0018	0.297	0.197	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW229	OCA	25 Mar 2020	0207_MW229_200325	OMP Apr 2020	0.64	<0.16[#2]	-	0.46	***28.4***	-	0.78	-	**6.42**	<0.8[#2]	<0.16[#2]	<0.16[#2]	<0.16[#2]	1.39	<0.16[#2]	0.34	0.26	<0.40[#2]	<0.16[#2]	<0.16[#2]	-
MW229	OCA	20 Oct 2020	0207_MW229_201020	OMP Oct 2020	0.60	<0.07[#2]	-	0.46	***19.9***	-	0.84	-	**6.40**	<0.4[#2]	<0.07[#2]	<0.07[#2]	0.16	1.62	<0.07[#2]	0.43	0.26	<0.18[#2]	<0.07[#2]	<0.07[#2]	-
MW229	OCA	20 Apr 2021	0207_MW229_210414	OMP Apr 2021	0.77	<0.05[#2]	-	0.59	***32.3***	-	1.00	-	**7.48**	<0.3[#2]	<0.05[#2]	<0.05[#2]	0.17	1.82	<0.05[#2]	0.54	0.32	<0.13[#2]	<0.05[#2]	<0.05[#2]	-
MW229	OCA	12 Oct 2021	0207_QC259_21012	OMP Oct 2021	0.62	<0.01	-	0.29	***19***	-	0.64	<0.01	**5.5**	0.17	<0.01	<0.01	0.12	1.3	<0.01	0.37	0.25	<0.02	<0.02	<0.01	<0.02
MW229	OCA	12 Oct 2021	0207_MW229_211012	OMP Oct 2021	0.79	<0.05[#2]	-	0.63	***22.4***	-	1.00	-	**7.35**	<0.2[#2]	<0.05[#2]	<0.05[#2]	0.17	1.93	<0.05[#2]	0.54	0.30	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW229	OCA	12 Oct 2021	0207_QC159_211012	OMP Oct 2021	0.83	<0.04[#2]	-	0.72	***32.9***	-	1.06	-	**7.95**	0.3	<0.04[#2]	<0.04[#2]	0.19	1.78	<0.04[#2]	**0.57**	0.32	<0.11[#2]	<0.04[#2]	<0.04[#2]	-
MW229	OCA	13 Apr 2022	0207_MW229_220413	OMP Apr 2022	0.60	<0.05[#2]	-	0.40	***20.6***	-	0.61	-	**5.56**	<0.2[#2]	<0.05[#2]	<0.05[#2]	0.11	1.60	<0.05[#2]	0.41	0.23	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW229	OCA	27 Oct 2022	0207_MW229_221027	OMP Oct 2022	0.67	<0.05[#2]	-	0.79	***29.0***	-	0.96	-	**9.23**	<0.2[#2]	<0.05[#2]	<0.05[#2]	0.20	2.47	<0.05[#2]	0.55	0.33	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW229	OCA	13 Apr 2023	0207_MW229_230413	OMP Apr 2023	1.06	<0.04[#2]	-	0.90	***34.9***	-	1.19	-	**11.1**	<0.2[#2]	<0.04[#2]	<0.04[#2]	0.23	2.37	<0.04[#2]	**0.70**	0.37	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW229	OCA	25 Oct 2023	0207_MW229_231025	OMP Oct 2023	0.96	<0.02	-	0.91	***45.3***	-	1.00	-	**11.3**	0.2	<0.02	<0.02	0.19	2.21	<0.02	**0.87**	0.40	<0.06[#2]	<0.02	<0.02	-
MW229	OCA	03 Apr 2024	0207_QC202_240403	OMP Apr 2024	0.52	<0.01	-	0.42	***17***	-	0.59	<0.01	**5.3**	0.14	<0.01	<0.01	0.12	1.4	<0.01	0.4	0.24	<0.02	<0.02	<0.01	<0.02
MW229	OCA	03 Apr 2024	0207_QC102_240403	OMP Apr 2024	0.47	<0.02	-	0.58	***27.3***	-	0.58	-	**6.76**	0.1	<0.02	<0.02	0.14	1.72	<0.02	0.52	0.27	<0.05	<0.02	<0.02	-
MW229	OCA	03 Apr 2024	0207_MW229_240403	OMP Apr 2024	0.55	<0.02	-	0.59	***31.6***	-	0.64	-	**8.08**	0.1	<0.02	<0.02	0.14	1.56	<0.02	0.51	0.26	<0.05	<0.02	<0.02	-
MW229	OCA	09 Oct 2024	0207_MW229_241009	OMP Oct 2024	1.07	<0.09[#2]	-	<0.89[#2]	***49.5***	-	<0.89[#2]	-	**11.3**	<4.5[#2]	<0.09[#2]	<0.09[#2]	<0.89[#2]	2.77	<0.09[#2]	<0.89[#2]	<0.89[#2]	<0.22[#2]	<0.09[#2]	<0.09[#2]	<0.22[#2]
MW230	OCA	20 Oct 2018	AACO-MWD2-A-181020	OMP Oct 2018	0.96	<0.02	-	0.43	***8.28***	-	0.83	-	**4.67**	3.2	0.07	<0.02	4.99	8.87	1.12	**4.55**	15.8	<0.05	<0.02	<0.02	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW230	OCA	25 Oct 2018	0207_MWD2-A_181025	OMP Oct 2018	0.0539	0.0007	-	0.0376	***0.974***	-	0.0468	-	**0.271**	0.024	0.0015	<0.0005	0.101	0.187	0.0218	0.123	0.164	<0.0005	<0.0005	<0.0005	-
MW230	OCA	11 Jul 2019	0207_MWD2-A_190711	OMP July 2019	0.688	<0.0005	-	0.420	***5.32***	-	0.820	-	**5.10**	0.845	0.0156	<0.0005	3.28	7.77	0.527	**3.72**	12.2	<0.0005	<0.0005	<0.0005	-
MW230	OCA	23 Oct 2019	0207_MW230_191023	OMP Oct 2019	0.92	<0.02	-	0.46	***4.12***	-	0.98	-	**5.91**	2.8	<0.02	<0.02	5.46	9.48	0.57	**4.60**	16.2	<0.05	<0.02	<0.02	-
MW230	OCA	30 Oct 2019	0207_MWD2-A_191030	OMP Oct 2019	0.940	0.0020	-	0.612	***6.53***	-	0.978	-	**5.49**	1.15	0.0183	<0.0005	4.20	8.91	0.672	**4.47**	13.7	<0.0005	<0.0005	<0.0005	-
MW230	OCA	31 Oct 2019	0207_QC1mw_191031	OMP Oct 2019	0.696	0.0008	-	0.411	***4.70***	-	0.667	-	**3.59**	1.08	0.0193	<0.0005	2.85	6.30	0.492	**3.01**	9.01	<0.0005	<0.0005	<0.0005	-
MW230	OCA	11 Mar 2020	0207_MW230_200310	OMP Apr 2020	1.14	<0.0016[#2]	-	0.478	***4.76***	-	0.867	-	**4.25**	0.649	0.0154	<0.0016[#2]	4.92	8.32	0.494	**3.89**	15.2	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW230	OCA	25 Mar 2020	0207_MW230_200325	OMP Apr 2020	1.10	<0.03[#2]	-	0.70	***7.74***	-	1.16	-	**6.61**	1.9	<0.03[#2]	<0.03[#2]	5.35	9.34	0.70	**4.94**	15.5	<0.08[#2]	<0.03[#2]	<0.03[#2]	-
MW230	OCA	19 Oct 2020	0207_MW230_201019	OMP Oct 2020	1.11	<0.04[#2]	-	0.77	***8.61***	-	1.11	-	**6.72**	5.0	<0.04[#2]	<0.04[#2]	6.27	11.9	0.65	**5.32**	22.9	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW230	OCA	14 Apr 2021	0207_MW230_210414	OMP Apr 2021	1.11	<0.04[#2]	-	0.78	***11.0***	-	1.20	-	**6.31**	4.8	<0.04[#2]	<0.04[#2]	7.22	12.3	0.94	**5.87**	25.3	<0.09[#2]	<0.04[#2]	<0.04[#2]	-
MW230	OCA	14 Apr 2021	0207_QC246_210414	OMP Apr 2021	0.94	<0.01	-	0.49	***6.4***	-	0.83	<0.01	**4.4**	3.7	0.017	<0.01	4.8	8.3	0.72	**3.6**	16	<0.02	<0.02	<0.01	<0.02
MW230	OCA	14 Apr 2021	0207_QC146_210414	OMP Apr 2021	1.02	<0.04[#2]	-	0.60	***8.40***	-	1.01	-	**5.45**	5.1	<0.04[#2]	<0.04[#2]	6.82	12.8	0.86	**5.96**	25.2	<0.09[#2]	<0.04[#2]	<0.04[#2]	-
MW230	OCA	12 Oct 2021	0207_MW230_211012	OMP Oct 2021	0.98	<0.02	-	0.74	***10.3***	-	0.96	-	**6.66**	4.7	0.04	<0.02	8.33	13.4	1.73	**7.44**	22.5	<0.06[#2]	<0.02	<0.02	-
MW230	OCA	17 Apr 2022	0207_MW230_220417	OMP Apr 2022	0.53	<0.02	-	0.34	***5.80***	-	0.55	-	**4.50**	3.8	0.05	<0.02	6.59	7.67	1.56	**5.87**	13.9	<0.06[#2]	<0.02	<0.02	-
MW230	OCA	26 Oct 2022	0207_MW230_221026	OMP Oct 2022	0.34	<0.02	-	0.14	***0.99***	-	0.37	-	**2.28**	0.2	<0.02	<0.02	0.28	0.96	0.07	0.40	0.40	<0.05	<0.02	<0.02	-
MW230	OCA	12 Apr 2023	0207_MW230_230412	OMP Apr 2023	0.34	<0.02	-	0.05	***0.48***	-	0.30	-	**1.24**	0.3	<0.02	<0.02	0.17	0.73	0.02	0.18	0.48	<0.05	<0.02	<0.02	-
MW230	OCA	25 Oct 2023	0207_MW230_231025	OMP Oct 2023	0.46	<0.02	-	0.14	***2.99***	-	0.38	-	**2.34**	2.0	0.03	<0.02	2.36	3.49	0.39	**1.81**	6.24	<0.05	<0.02	<0.02	-
MW230	OCA	03 Apr 2024	0207_QC203_240403	OMP Apr 2024	0.28	<0.01	-	0.078	***1.6***	-	0.26	<0.01	**1.7**	1.9	0.011	<0.01	1.6	2.7	0.29	**1.4**	4.7	<0.02	<0.02	<0.01	<0.02
MW230	OCA	03 Apr 2024	0207_QC103_240403	OMP Apr 2024	0.26	<0.02	-	0.14	***2.73***	-	0.33	-	**2.11**	1.8	<0.02	<0.02	2.47	4.44	0.31	**1.51**	6.76	<0.05	<0.02	<0.02	-
MW230	OCA	03 Apr 2024	0207_MW230_240403	OMP Apr 2024	0.29	<0.02	-	0.14	***3.42***	-	0.31	-	**1.92**	1.9	<0.02	<0.02	2.51	4.08	0.34	**1.54**	6.57	<0.05	<0.02	<0.02	-
MW230	OCA	09 Oct 2024	0207_MW230_241009	OMP Oct 2024	0.50	<0.02	-	0.20	***4.20***	-	0.52	-	**3.07**	2.1	0.04	<0.02	4.33	5.86	1.01	**2.90**	7.90	<0.05	<0.02	<0.02	<0.05
MW232	OCA	24 Oct 2018	AACO_QC205_181024	OMP Oct 2018	0.14	<0.01	-	0.34	***11***	-	0.19	<0.01	**2**	0.39	0.29	<0.01	0.75	0.84	0.38	**1**	0.94	<0.02	<0.02	<0.01	<0.02
MW232	OCA	24 Oct 2018	AACO-QC105-181024	OMP Oct 2018	0.12	<0.02	-	0.25	***11.6***	-	0.21	-	**1.94**	0.3	0.27	<0.02	0.71	0.81	0.35	**0.95**	0.84	<0.05	<0.02	<0.02	-
MW232	OCA	24 Oct 2018	AACO-MWD2-E-181024	OMP Oct 2018	0.13	<0.02	-	0.29	***11.7***	-	0.24	-	**2.18**	0.4	0.30	<0.02	0.79	0.94	0.40	**1.11**	1.02	<0.05	<0.02	<0.02	-
MW232	OCA	23 Oct 2019	0207_MW232_191023	OMP Oct 2019	0.32	<0.02	-	0.18	***21.2***	-	0.45	-	**3.33**	0.7	0.97	<0.02	1.30	2.05	0.43	**1.28**	3.31	<0.05	<0.02	<0.02	-
MW232	OCA	01 Apr 2020	0207_MW232_200401	OMP Apr 2020	0.33	<0.02	-	0.33	***12.4***	-	0.37	-	**2.53**	0.7	0.40	<0.02	1.10	1.52	0.38	**1.11**	1.86	<0.05	<0.02	<0.02	-
MW232	OCA	20 Oct 2020	0207_MW232_201020	OMP Oct 2020	0.23	<0.04[#2]	-	0.28	***14.3***	-	0.32	-	**2.82**	0.8	0.45	<0.04[#2]	1.08	1.56	0.38	**1.16**	2.31	<0.09[#2]	<0.04[#2]	<0.04[#2]	-
MW232	OCA	14 Apr 2021	0207_MW232_210414	OMP Apr 2021	0.33	<0.04[#2]	-	0.44	***21.2***	-	0.49	-	**3.52**	0.7	0.42	<0.04[#2]	1.20	1.71	0.37	**1.42**	2.34	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW232	OCA	13 Oct 2021	0207_MW232_211013	OMP Oct 2021	0.08	<0.02	-	0.04	***4.54***	-	0.12	-	**1.19**	0.5	0.35	<0.02	0.68	1.32	0.12	**0.59**	2.09	<0.06[#2]	<0.02	<0.02	-
MW232	OCA	17 Apr 2022	0207_MW232_220417	OMP Apr 2022	0.63	<0.05[#2]	-	0.42	***14.9***	-	0.72	-	**5.85**	0.9	0.22	<0.05[#2]	1.10	2.34	0.29	**1.50**	2.63	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW232	OCA	27 Oct 2022	0207_MW232_221027	OMP Oct 2022	0.67	<0.05[#2]	-	0.27	***9.67***	-	0.76	-	**6.50**	1.4	0.25	<0.05[#2]	1.17	2.39	0.25	**1.56**	3.59	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW232	OCA	12 Apr 2023	0207_MW232_230412	OMP Apr 2023	0.83	<0.02	-	0.98	***16.1***	-	1.22	-	**6.16**	1.1	0.38	<0.02	1.17	2.32	0.47	**1.70**	2.74	<0.05	<0.02	<0.02	-
MW232	OCA	25 Oct 2023	0207_MW232_231025	OMP Oct 2023	3.42	<0.02	-	0.16	***2.87***	-	2.54	-	**7.43**	2.7	0.14	<0.02	2.06	7.15	0.16	**2.17**	9.10	<0.05	<0.02	<0.02	-
MW232	OCA	03 Apr 2024	0207_MW232_240403	OMP Apr 2024	0.12	<0.02	-	0.10	***7.24***	-	0.10	-	**0.97**	0.2	0.21	<0.02	0.49	0.54	0.18	0.46	0.76	<0.05	<0.02	<0.02	-
MW233	OCA	23 Oct 2018	AACO-MWE-J-181023	OMP Oct 2018	0.56	<0.02	-	0.03	***0.61***	-	0.46	-	**2.32**	0.3	<0.02	<0.02	0.17	1.19	<0.02	0.17	0.36	<0.05	<0.02	<0.02	-
MW233	OCA	24 Oct 2019	0207_MW233_191024	OMP Oct 2019	0.10	<0.02	-	0.05	***0.63***	-	0.10	-	**1.11**	<0.1	<0.02	<0.02	0.04	0.16	<0.02	0.22	0.06	<0.05	<0.02	<0.02	-
MW233	OCA	26 Mar 2020	0207_MW233_200326	OMP Apr 2020	0.20	<0.02	-	<0.02	***0.45***	-	0.18	-	**0.82**	<0.1	<0.02	<0.02	0.04	0.25	<0.02	0.05	0.06	<0.05	<0.02	<0.02	-
MW233	OCA	21 Oct 2020	0207_MW233_201021	OMP Oct 2020	0.21	<0.02	-	<0.02	***0.27***	-	0.18	-	**1.00**	<0.10	<0.02	<0.02	0.04	0.19	<0.02	0.05	<0.06[#2]	<0.05	<0.02	<0.02	-
MW233	OCA	17 Apr 2021	0207_MW233_210417	OMP Apr 2021	0.21	<0.02	-	0.03	***0.54***	-	0.17	-	**0.96**	<0.10	<0.02	<0.02	0.04	0.21	<0.02	0.07	0.06	<0.05	<0.02	<0.02	-
MW233	OCA	14 Oct 2021	0207_MW233_211014	OMP Oct 2021	0.17	<0.02	-	0.05	***0.91***	-	0.16	-	**1.06**	<0.1	<0.02	<0.02	0.04	0.22	<0.02	0.09	0.06	<0.05	<0.02	<0.02	-
MW233	OCA	20 Apr 2022	0207_QC213_220420	OMP Apr 2022	0.16	<0.01	-	<0.01	***0.17***	-	0.12	<0.01	**0.64**	0.056	<0.01	<0.01	0.013	0.092	<0.01	0.014	0.035	<0.02	<0.02	<0.01	<0.02
MW233	OCA	20 Apr 2022	0207_QC113_220420	OMP Apr 2022	0.16	<0.02	-	<0.02	***0.22***	-	0.10	-	**0.66**	<0.1	<0.02	<0.02	0.02	0.13	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	OCA	20 Apr 2022	0207_MW233_220420	OMP Apr 2022	0.16	<0.02	-	<0.02	***0.22***	-	0.12	-	**0.63**	<0.1	<0.02	<0.02	0.02	0.13	<0.02	0.03	0.04	<0.05	<0.02	<0.02	-
MW233	OCA	24 Nov 2022	0207_MW233_221124	OMP Oct 2022	0.11	<0.02	-	<0.02	***0.15***	-	0.10	-	**0.59**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	OCA	13 Apr 2023	0207_QC205_230413	OMP Apr 2023	0.14	<0.01	-	0.02	***0.25***	-	0.12	<0.01	**0.79**	0.053	<0.01	<0.01	0.016	0.1	<0.01	0.037	0.031	<0.02	<0.02	<0.01	<0.02
MW233	OCA	13 Apr 2023	0207_MW233_230413	OMP Apr 2023	0.21	<0.02	-	<0.02	***0.26***	-	0.14	-	**0.77**	<0.1	<0.02	<0.02	<0.02	0.13	<0.02	0.03	0.04	<0.05	<0.02	<0.02	-
MW233	OCA	13 Apr 2023	0207_QC105_230413	OMP Apr 2023	0.19	<0.02	-	0.02	***0.27***	-	0.16	-	**0.81**	<0.1	<0.02	<0.02	0.02	0.14	<0.02	0.04	0.04	<0.05	<0.02	<0.02	-
MW233	OCA	26 Oct 2023	0207_MW233_231026	OMP Oct 2023	0.11	<0.02	-	<0.02	***0.15***	-	0.10	-	**0.68**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.04	0.03	<0.05	<0.02	<0.02	-
MW233	OCA	03 Apr 2024	0207_QC204_240403	OMP Apr 2024	0.096	<0.01	-	<0.01	***0.16***	-	0.066	<0.01	**0.5**	<0.05	<0.01	<0.01	<0.01	0.065	<0.01	0.023	0.024	<0.02	<0.02	<0.01	<0.02
MW233	OCA	03 Apr 2024	0207_QC104_240403	OMP Apr 2024	0.08	<0.02	-	<0.02	***0.17***	-	0.08	-	**0.59**	<0.1	<0.02	<0.02	<0.02	0.09	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	OCA	03 Apr 2024	0207_MW233_240403	OMP Apr 2024	0.08	<0.02	-	<0.02	***0.19***	-	0.06	-	**0.48**	<0.1	<0.02	<0.02	<0.02	0.09	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	OCA	10 Oct 2024	0207_MW233_241010	OMP Oct 2024	0.09	<0.02	-	<0.04[#2]	***0.29***	-	0.07	-	**0.46**	<0.2[#2]	<0.02	<0.02	<0.04[#2]	0.11	<0.02	<0.04[#2]	<0.04[#2]	<0.05	<0.02	<0.02	<0.05

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW235	OCA	24 Oct 2018	AACO-MWFI-B-181024	OMP Oct 2018	4.86	<0.02	-	0.25	***5.59***	-	4.59	-	**11.2**	1.3	<0.02	<0.02	0.50	7.88	<0.02	0.36	1.67	<0.05	<0.02	<0.02	-
MW235	OCA	23 Oct 2019	0207_MW235_191023	OMP Oct 2019	6.06	<0.02	-	0.32	***4.83***	-	6.66	-	**23.0**	1.4	<0.02	<0.02	1.13	11.1	<0.02	**0.91**	2.32	<0.05	<0.02	<0.02	-
MW235	OCA	01 Apr 2020	0207_QC222_200401	OMP Apr 2020	4.1	<0.01	-	0.24	***3.0***	-	3.3	<0.01	**12**	1.7	<0.01	<0.01	0.61	7.4	<0.01	0.49	1.5	<0.02	<0.02	<0.01	<0.02
MW235	OCA	01 Apr 2020	0207_QC122_200401	OMP Apr 2020	4.89	<0.02	-	0.37	***4.78***	-	4.56	-	**16.7**	1.6	<0.02	<0.02	0.80	9.58	<0.02	0.56	2.08	<0.05	<0.02	<0.02	-
MW235	OCA	01 Apr 2020	0207_MW235_200401	OMP Apr 2020	4.90	<0.02	-	0.35	***4.81***	-	4.67	-	**16.4**	1.5	<0.02	<0.02	0.79	9.32	<0.02	0.54	2.11	<0.05	<0.02	<0.02	-
MW235	OCA	20 Oct 2020	0207_MW235_201020	OMP Oct 2020	4.86	<0.04[#2]	-	0.28	***4.38***	-	4.77	-	**13.7**	1.4	<0.04[#2]	<0.04[#2]	0.67	9.48	<0.04[#2]	0.54	1.97	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW235	OCA	14 Apr 2021	0207_MW235_210414	OMP Apr 2021	6.73	<0.04[#2]	-	0.40	***5.29***	-	7.34	-	**20.1**	1.8	<0.04[#2]	<0.04[#2]	1.26	12.8	<0.04[#2]	**1.04**	2.72	<0.09[#2]	<0.04[#2]	<0.04[#2]	-
MW235	OCA	13 Oct 2021	0207_MW235_211013	OMP Oct 2021	6.94	<0.02	-	0.61	***5.19***	-	8.20	-	**22.1**	1.9	<0.02	<0.02	1.27	13.7	<0.02	**1.03**	2.53	<0.05	<0.02	<0.02	-
MW235	OCA	20 Apr 2022	0207_MW235_220420	OMP Apr 2022	1.81	<0.05[#2]	-	0.10	***4.80***	-	1.80	-	**5.90**	0.5	<0.05[#2]	<0.05[#2]	0.22	3.10	<0.05[#2]	0.18	0.77	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW235	OCA	26 Oct 2022	0207_MW235_221026	OMP Oct 2022	3.94	<0.02	-	0.28	***5.16***	-	3.20	-	**9.12**	1.2	<0.02	<0.02	0.40	7.78	<0.02	0.30	1.57	<0.05	<0.02	<0.02	-
MW235	OCA	11 Apr 2023	0207_MW235_230411	OMP Apr 2023	4.39	<0.02	-	0.22	***4.27***	-	3.55	-	**6.93**	1.2	<0.02	<0.02	0.37	5.30	<0.02	0.23	1.58	<0.05	<0.02	<0.02	-
MW235	OCA	26 Oct 2023	0207_MW235_231026	OMP Oct 2023	5.72	<0.02	-	0.24	***6.14***	-	3.84	-	**9.19**	1.6	<0.02	<0.02	0.36	6.75	<0.02	0.30	2.03	<0.05	<0.02	<0.02	-
MW235	OCA	04 Apr 2024	0207_MW235_240404	OMP Apr 2024	3.84	<0.02	-	0.18	***4.63***	-	2.83	-	**6.41**	1.2	<0.02	<0.02	0.33	6.14	<0.02	0.24	1.63	<0.05	<0.02	<0.02	-
MW235	OCA	10 Oct 2024	0207_MW235_241010	OMP Oct 2024	7.13	<0.05[#2]	-	<0.48[#2]	***3.39***	-	4.64	-	**9.81**	1.3	<0.05[#2]	<0.05[#2]	0.37	9.14	<0.05[#2]	0.29	2.03	<0.12[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]
MW236	OCA	24 Oct 2018	AACO-MWF1-C-181024	OMP Oct 2018	3.99	<0.02	-	0.84	***8.94***	-	3.51	-	**15.0**	1.1	<0.02	<0.02	0.70	5.94	<0.02	**1.43**	1.25	<0.05	<0.02	<0.02	-
MW236	OCA	23 Oct 2019	0207_MW236_191023	OMP Oct 2019	3.26	<0.02	-	0.60	***6.61***	-	2.62	-	**15.4**	0.8	<0.02	<0.02	0.54	4.66	<0.02	**1.00**	0.96	<0.05	<0.02	<0.02	-
MW236	OCA	01 Apr 2020	0207_MW236_200401	OMP Apr 2020	1.76	0.02	-	0.47	***4.98***	-	1.47	-	**7.17**	0.8	<0.02	<0.02	0.35	2.54	<0.02	**0.86**	0.58	<0.05	<0.02	<0.02	-
MW236	OCA	20 Oct 2020	0207_MW236_201020	OMP Oct 2020	3.43	<0.02	-	0.56	***6.29***	-	2.30	-	**8.96**	1.21	<0.02	<0.02	0.49	5.06	<0.02	**0.89**	1.15	<0.05	<0.02	<0.02	-
MW236	OCA	14 Apr 2021	0207_MW236_210414	OMP Apr 2021	3.56	<0.02	-	0.52	***5.08***	-	2.64	-	**9.33**	0.98	<0.02	<0.02	0.48	4.55	<0.02	**0.75**	1.09	<0.05	<0.02	<0.02	-
MW236	OCA	13 Oct 2021	0207_QC260_21013	OMP Oct 2021	5.1	<0.01	-	0.26	***3.2***	-	4.4	<0.01	**15**	1.7	<0.01	<0.01	0.87	9	<0.01	**0.68**	2.2	<0.02	<0.02	<0.01	<0.02
MW236	OCA	13 Oct 2021	0207_MW236_211013	OMP Oct 2021	3.36	<0.10[#2]	-	0.39	***3.78***	-	2.20	-	**7.57**	0.9	<0.10[#2]	<0.10[#2]	0.43	4.41	<0.10[#2]	**0.69**	1.10	<0.24[#2]	<0.10[#2]	<0.10[#2]	-
MW236	OCA	13 Oct 2021	0207_QC160_211013	OMP Oct 2021	6.94	<0.02	-	0.48	***4.87***	-	7.24	-	**21.0**	2.0	<0.02	<0.02	1.25	13.4	<0.02	**1.06**	2.42	<0.06[#2]	<0.02	<0.02	-
MW236	OCA	20 Apr 2022	0207_MW236_220420	OMP Apr 2022	0.66	<0.02	-	<0.06[#2]	***0.96***	-	0.46	-	**1.84**	0.4	<0.02	<0.02	0.06	1.02	<0.02	0.23	0.31	<0.06[#2]	<0.02	<0.02	-
MW236	OCA	26 Oct 2022	0207_MW236_221026	OMP Oct 2022	1.36	<0.02	-	0.02	***0.26***	-	0.55	-	**1.16**	0.8	<0.02	<0.02	0.15	2.86	<0.02	0.17	0.83	<0.05	<0.02	<0.02	-
MW236	OCA	11 Apr 2023	0207_MW236_230411	OMP Apr 2023	1.38	<0.02	-	0.07	***0.84***	-	0.79	-	**2.38**	0.8	<0.02	<0.02	0.15	2.20	<0.02	0.22	0.65	<0.05	<0.02	<0.02	-
MW236	OCA	26 Oct 2023	0207_MW236_231026	OMP Oct 2023	2.11	<0.02	-	0.04	***0.40***	-	0.85	-	**2.22**	0.8	<0.02	<0.02	0.17	2.12	<0.02	0.24	0.82	<0.05	<0.02	<0.02	-
MW236	OCA	04 Apr 2024	0207_QC207_240404	OMP Apr 2024	1.7	<0.01	-	0.045	***0.47***	-	1.1	<0.01	**2.5**	0.65	<0.01	<0.01	0.2	1.6	<0.01	0.25	0.57	<0.02	<0.02	<0.01	<0.02
MW236	OCA	04 Apr 2024	0207_QC107_240404	OMP Apr 2024	1.46	<0.02	-	0.11	***0.68***	-	1.21	-	**4.51**	0.6	<0.02	<0.02	0.25	2.85	<0.02	0.34	0.70	<0.05	<0.02	<0.02	-
MW236	OCA	04 Apr 2024	0207_MW236_240404	OMP Apr 2024	1.64	<0.02	-	0.13	***0.84***	-	1.15	-	**4.18**	0.6	<0.02	<0.02	0.28	2.81	<0.02	0.38	0.65	<0.05	<0.02	<0.02	-
MW236	OCA	10 Oct 2024	0207_MW236_241010	OMP Oct 2024	2.82	<0.05[#2]	-	<0.46[#2]	***4.63***	-	2.31	-	**12.4**	<2.3[#2]	<0.05[#2]	<0.05[#2]	0.46	4.40	<0.05[#2]	**0.83**	0.60	<0.12[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]
MW241	OCA	24 Oct 2018	AACO-MWF1-H-181024	OMP Oct 2018	0.20	<0.02	-	0.13	***4.70***	-	0.22	-	**1.88**	<0.1	<0.02	<0.02	0.07	0.30	<0.02	0.16	0.12	<0.05	<0.02	<0.02	-
MW241	OCA	23 Oct 2019	0207_MW241_191023	OMP Oct 2019	0.19	<0.02	-	0.08	***2.90***	-	0.18	-	**1.53**	<0.1	<0.02	<0.02	0.06	0.26	<0.02	0.11	0.10	<0.05	<0.02	<0.02	-
MW241	OCA	01 Apr 2020	0207_MW241_200401	OMP Apr 2020	0.20	<0.02	-	0.12	***3.93***	-	0.19	-	**1.57**	0.1	<0.02	<0.02	0.07	0.25	<0.02	0.14	0.10	<0.05	<0.02	<0.02	-
MW241	OCA	20 Oct 2020	0207_MW241_201020	OMP Oct 2020	0.17	<0.02	-	0.09	***2.64***	-	0.16	-	**1.42**	<0.1	<0.02	<0.02	0.06	0.24	<0.02	0.13	0.08	<0.05	<0.02	<0.02	-
MW241	OCA	14 Apr 2021	0207_MW241_210414	OMP Apr 2021	0.13	<0.02	-	0.11	***3.77***	-	0.16	-	**1.44**	<0.1	<0.02	<0.02	0.06	0.21	<0.02	0.14	0.09	<0.05	<0.02	<0.02	-
MW241	OCA	13 Oct 2021	0207_MW241_211013	OMP Oct 2021	0.16	<0.02	-	0.15	***4.29***	-	0.21	-	**1.67**	0.1	<0.02	<0.02	0.07	0.25	<0.02	0.17	0.08	<0.05	<0.02	<0.02	-
MW241	OCA	19 Apr 2022	0207_MW241_220419	OMP Apr 2022	0.13	<0.02	-	0.07	***3.71***	-	0.15	-	**1.38**	<0.1	<0.02	<0.02	0.05	0.21	<0.02	0.11	0.06	<0.06[#2]	<0.02	<0.02	-
MW241	OCA	26 Oct 2022	0207_MW241_221026	OMP Oct 2022	0.18	<0.02	-	0.11	***6.84***	-	0.14	-	**1.18**	<0.1	<0.02	<0.02	0.05	0.23	<0.02	0.16	0.06	<0.05	<0.02	<0.02	-
MW241	OCA	11 Apr 2023	0207_MW241_230411	OMP Apr 2023	0.13	<0.02	-	0.11	***4.66***	-	0.14	-	**1.02**	<0.1	<0.02	<0.02	0.04	0.17	<0.02	0.11	0.07	<0.05	<0.02	<0.02	-
MW241	OCA	26 Oct 2023	0207_MW241_231026	OMP Oct 2023	0.15	<0.02	-	0.09	***4.00***	-	0.13	-	**1.10**	<0.1	<0.02	<0.02	0.04	0.14	<0.02	0.12	0.06	<0.05	<0.02	<0.02	-
MW241	OCA	04 Apr 2024	0207_QC206_240404	OMP Apr 2024	0.086	<0.01	-	0.048	***2.4***	-	0.094	<0.01	**0.8**	0.051	<0.01	<0.01	0.022	0.11	<0.01	0.066	0.037	<0.02	<0.02	<0.01	<0.02
MW241	OCA	04 Apr 2024	0207_QC106_240404	OMP Apr 2024	0.08	<0.02	-	0.10	***4.08***	-	0.09	-	**0.89**	<0.1	<0.02	<0.02	0.03	0.14	<0.02	0.09	0.05	<0.05	<0.02	<0.02	-
MW241	OCA	04 Apr 2024	0207_MW241_240404	OMP Apr 2024	0.08	<0.02	-	0.08	***4.19***	-	0.09	-	**0.79**	<0.1	<0.02	<0.02	0.03	0.13	<0.02	0.09	0.04	<0.05	<0.02	<0.02	-
MW241	OCA	10 Oct 2024	0207_MW241_241010	OMP Oct 2024	<0.22[#2]	<0.02	-	0.06	***4.86***	-	0.14	-	**0.98**	<0.1	<0.02	<0.02	0.03	0.16	<0.02	0.08	0.06	<0.05	<0.02	<0.02	<0.05
MW243	OCA	05 Apr 2024	0207_MW242_240405	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	29 Nov 2018	AACO_QC108_181129	OMP Oct 2018	0.04	<0.02	-	<0.02	***0.16***	-	0.04	-	**0.34**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	29 Nov 2018	AACO_MWG1-C-LA_181	OMP Oct 2018	0.04	<0.02	-	<0.02	***0.17***	-	0.04	-	**0.29**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	<0.01	0.02	<0.05	<0.02	<0.02	-
MW245	OCA	23 Oct 2019	0207_MW245_191023	OMP Oct 2019	0.04	<0.02	-	<0.02	***0.10***	-	0.04	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	26 Mar 2020	0207_MW245_200326	OMP Apr 2020	0.04	<0.03[#2]	-	<0.03[#2]	***0.18***	-	0.04	-	**0.31**	<0.2[#2]	<0.03[#2]	<0.03[#2]	<0.03[#2]	0.06	<0.03[#2]	<0.03[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.03[#2]	-
MW245	OCA	20 Oct 2020	0207_QC233_201020	OMP Oct 2020	0.028	<0.01	-	<0.01	***0.11***	-	0.027	<0.01	**0.19**	<0.05	<0.01	<0.01	<0.01	0.042	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW245	OCA	20 Oct 2020	0207_QC133_201020	OMP Oct 2020	0.04	<0.02	-	<0.02	***0.13***	-	0.04	-	**0.23**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	20 Oct 2020	0207_MW245_201020	OMP Oct 2020	0.04	<0.02	-	<0.02	***0.13***	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW245	OCA	20 Apr 2021	0207_MW245_210420	OMP Apr 2021	0.03	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	11 Oct 2021	0207_QC255_21011	OMP Oct 2021	0.031	<0.01	-	<0.01	***0.082***	-	0.031	<0.01	**0.19**	<0.05	<0.01	<0.01	<0.01	0.044	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW245	OCA	11 Oct 2021	0207_QC155_211011	OMP Oct 2021	0.04	<0.02	-	<0.02	***0.13***	-	0.05	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	11 Oct 2021	0207_MW245_211011	OMP Oct 2021	0.04	<0.02	-	<0.02	***0.14***	-	0.04	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	18 Apr 2022	0207_MW245_220418	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.02[#2]	<0.02	<0.06[#2]	<0.02	<0.02	-
MW245	OCA	18 Apr 2022	0207_QC108_220418	OMP Apr 2022	0.03	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	18 Apr 2022	0207_QC208_220418	OMP Apr 2022	0.031	<0.01	-	<0.01	***0.38***	-	0.033	<0.01	**0.21**	<0.05	<0.01	<0.01	<0.01	0.046	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW245	OCA	03 Nov 2022	0207_MW245_221103	OMP Oct 2022	0.03	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.19**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	13 Apr 2023	0207_MW245_230413	OMP Apr 2023	0.05	<0.02	-	<0.02	***0.17***	-	0.05	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	26 Oct 2023	0207_MW245_231026	OMP Oct 2023	0.05	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.21**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	05 Apr 2024	0207_MW245_240405	OMP Apr 2024	0.03	<0.02	-	<0.02	***0.08***	-	0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	OCA	08 Oct 2024	0207_MW245_241008	OMP Oct 2024	0.04	<0.02	-	<0.04[#2]	***0.10***	-	<0.04[#2]	-	**0.20**	<0.2[#2]	<0.02	<0.02	<0.04[#2]	0.06	<0.02	<0.04[#2]	<0.04[#2]	<0.05	<0.02	<0.02	<0.05
MW249	OCA	25 Oct 2018	AACO-MWN-D-181025	OMP Oct 2018	0.60	<0.02	-	0.03	*0.04*	-	0.66	-	**2.39**	0.2	<0.02	<0.02	0.11	1.20	<0.02	0.05	0.30	<0.05	<0.02	<0.02	-
MW249	OCA	23 Oct 2019	0207_MW249_191023	OMP Oct 2019	0.60	<0.02	-	0.04	***0.09***	-	0.72	-	**3.12**	0.1	<0.02	<0.02	0.13	1.16	<0.02	0.07	0.30	<0.05	<0.02	<0.02	-
MW249	OCA	01 Apr 2020	0207_QC223_200401	OMP Apr 2020	0.73	<0.01	-	0.025	*0.068*	-	0.74	<0.01	**2.9**	0.24	<0.01	<0.01	0.12	1.4	<0.01	0.077	0.39	<0.02	<0.02	<0.01	<0.02
MW249	OCA	01 Apr 2020	0207_QC123_200401	OMP Apr 2020	0.86	<0.02	-	0.06	***0.12***	-	0.98	-	**3.62**	0.3	<0.02	<0.02	0.20	1.52	<0.02	0.11	0.42	<0.05	<0.02	<0.02	-
MW249	OCA	01 Apr 2020	0207_MW249_200401	OMP Apr 2020	0.82	<0.02	-	0.06	***0.12***	-	1.04	-	**3.92**	0.3	<0.02	<0.02	0.20	1.47	<0.02	0.11	0.42	<0.05	<0.02	<0.02	-
MW249	OCA	20 Oct 2020	0207_MW249_201020	OMP Oct 2020	0.82	<0.02	-	0.05	***0.13***	-	0.93	-	**3.95**	0.2	<0.02	<0.02	0.17	1.62	<0.02	0.10	0.41	<0.05	<0.02	<0.02	-
MW249	OCA	14 Apr 2021	0207_MW249_210414	OMP Apr 2021	0.71	<0.02	-	0.06	***0.15***	-	0.94	-	**4.04**	0.2	<0.02	<0.02	0.17	1.41	<0.02	0.11	0.43	<0.05	<0.02	<0.02	-
MW249	OCA	13 Oct 2021	0207_MW249_211013	OMP Oct 2021	0.91	<0.02	-	0.08	***0.18***	-	1.03	-	**4.34**	0.3	<0.02	<0.02	0.21	1.82	<0.02	0.14	0.51	<0.05	<0.02	<0.02	-
MW249	OCA	19 Apr 2022	0207_QC211_220419	OMP Apr 2022	0.48	<0.01	-	0.021	***0.082***	-	0.52	<0.01	**2.1**	0.22	<0.01	<0.01	0.09	0.84	<0.01	0.06	0.22	<0.02	<0.02	<0.01	<0.02
MW249	OCA	19 Apr 2022	0207_QC111_220419	OMP Apr 2022	0.49	<0.02	-	0.03	***0.11***	-	0.53	-	**2.52**	0.2	<0.02	<0.02	0.11	0.98	<0.02	0.08	0.27	<0.05	<0.02	<0.02	-
MW249	OCA	19 Apr 2022	0207_MW249_220419	OMP Apr 2022	0.57	<0.02	-	<0.02	***0.11***	-	0.57	-	**2.58**	<0.1	<0.02	<0.02	0.11	0.99	<0.02	0.07	0.30	<0.06[#2]	<0.02	<0.02	-
MW249	OCA	26 Oct 2022	0207_QC264_221026	OMP Oct 2022	0.44	<0.02	-	0.03	***0.12***	-	0.56	-	**2.43**	0.2	<0.02	<0.02	0.11	0.91	<0.02	0.07	0.28	<0.05	<0.02	<0.02	-
MW249	OCA	26 Oct 2022	0207_QC164_221026	OMP Oct 2022	0.52	<0.02	-	0.04	***0.14***	-	0.56	-	**2.46**	0.2	<0.02	<0.02	0.13	1.01	<0.02	0.08	0.29	<0.05	<0.02	<0.02	-
MW249	OCA	26 Oct 2022	0207_MW249_221026	OMP Oct 2022	0.65	<0.02	-	0.06	***0.17***	-	0.71	-	**3.22**	0.2	<0.02	<0.02	0.16	1.46	<0.02	0.09	0.37	<0.05	<0.02	<0.02	-
MW249	OCA	11 Apr 2023	0207_MW249_230411	OMP Apr 2023	0.96	<0.02	-	0.06	***0.19***	-	1.12	-	**4.22**	0.3	<0.02	<0.02	0.18	1.48	<0.02	0.12	0.49	<0.05	<0.02	<0.02	-
MW249	OCA	26 Oct 2023	0207_MW249_231026	OMP Oct 2023	0.91	<0.02	-	0.04	***0.16***	-	0.87	-	**3.45**	0.2	<0.02	<0.02	0.16	1.11	<0.02	0.12	0.45	<0.05	<0.02	<0.02	-
MW249	OCA	04 Apr 2024	0207_QC208_240404	OMP Apr 2024	0.84	<0.01	-	0.025	***0.13***	-	0.85	<0.01	**2.6**	0.26	<0.01	<0.01	0.15	1.2	<0.01	0.079	0.36	<0.02	<0.02	<0.01	<0.02
MW249	OCA	04 Apr 2024	0207_QC108_240404	OMP Apr 2024	0.70	<0.02	-	0.05	***0.17***	-	0.92	-	**4.13**	0.2	<0.02	<0.02	0.19	1.54	<0.02	0.12	0.47	<0.05	<0.02	<0.02	-
MW249	OCA	04 Apr 2024	0207_MW249_240404	OMP Apr 2024	0.68	<0.02	-	0.05	***0.19***	-	0.76	-	**3.33**	0.2	<0.02	<0.02	0.17	1.39	<0.02	0.11	0.44	<0.05	<0.02	<0.02	-
MW249	OCA	10 Oct 2024	0207_MW249_241010	OMP Oct 2024	1.12	<0.02	-	0.05	***0.22***	-	1.12	-	**4.05**	0.4	<0.02	<0.02	0.19	1.61	<0.02	0.08	0.38	<0.05	<0.02	<0.02	<0.05
MW252	OCA	24 Oct 2018	AACO-MWN-I-181024	OMP Oct 2018	2.10	<0.02	-	0.94	***23.8***	-	2.74	-	**12.9**	0.6	<0.02	<0.02	0.66	3.66	0.03	**1.09**	1.12	<0.05	<0.02	<0.02	-
MW252	OCA	23 Oct 2019	0207_MW252_191023	OMP Oct 2019	1.65	<0.02	-	0.76	***26.3***	-	2.03	-	**13.2**	0.4	<0.02	<0.02	0.56	2.80	0.03	**1.02**	0.91	<0.05	<0.02	<0.02	-
MW252	OCA	01 Apr 2020	0207_MW252_200401	OMP Apr 2020	1.40	<0.02	-	1.07	***20.4***	-	1.99	-	**9.78**	0.5	<0.02	<0.02	0.56	2.14	0.03	**0.94**	0.74	<0.05	<0.02	<0.02	-
MW252	OCA	20 Oct 2020	0207_MW252_201020	OMP Oct 2020	1.16	<0.10[#2]	-	0.46	***16.3***	-	1.12	-	**6.55**	<0.50[#2]	<0.10[#2]	<0.10[#2]	0.38	1.55	<0.10[#2]	**0.68**	0.65	<0.25[#2]	<0.10[#2]	<0.10[#2]	-
MW252	OCA	14 Apr 2021	0207_MW252_210414	OMP Apr 2021	2.41	<0.10[#2]	-	0.64	***17.0***	-	2.70	-	**11.5**	0.83	<0.10[#2]	<0.10[#2]	0.76	3.43	<0.10[#2]	**0.97**	1.55	<0.25[#2]	<0.10[#2]	<0.10[#2]	-
MW252	OCA	13 Oct 2021	0207_MW252_211013	OMP Oct 2021	0.97	<0.02	-	0.47	***11.2***	-	1.21	-	**6.13**	0.3	<0.02	<0.02	0.31	1.22	0.02	0.53	0.51	<0.05	<0.02	<0.02	-
MW252	OCA	20 Apr 2022	0207_QC212_220420	OMP Apr 2022	0.32	<0.01	-	0.051	***3.4***	-	0.25	<0.01	**1.3**	0.18	<0.01	<0.01	0.07	0.36	<0.01	0.12	0.16	<0.02	<0.02	<0.01	<0.02
MW252	OCA	20 Apr 2022	0207_QC112_220420	OMP Apr 2022	0.28	<0.02	-	0.08	***4.05***	-	0.24	-	**1.30**	0.1	<0.02	<0.02	0.08	0.34	<0.02	0.12	0.19	<0.05	<0.02	<0.02	-
MW252	OCA	20 Apr 2022	0207_MW252_220420	OMP Apr 2022	0.30	<0.05[#2]	-	0.05	***4.20***	-	0.20	-	**1.25**	<0.2[#2]	<0.05[#2]	<0.05[#2]	0.07	0.37	<0.05[#2]	0.10	0.15	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW252	OCA	26 Oct 2022	0207_MW252_221026	OMP Oct 2022	0.11	<0.02	-	0.03	***2.23***	-	0.08	-	**0.50**	<0.1	<0.02	<0.02	0.03	0.13	<0.02	0.03	0.06	<0.05	<0.02	<0.02	-
MW252	OCA	11 Apr 2023	0207_MW252_230411	OMP Apr 2023	0.55	<0.02	-	0.17	***9.06***	-	0.53	-	**2.20**	0.2	<0.02	<0.02	0.19	0.72	0.02	0.26	0.45	<0.05	<0.02	<0.02	-
MW252	OCA	26 Oct 2023	0207_QC103_231026	OMP Oct 2023	0.89	<0.02	-	0.23	***12.2***	-	0.72	-	**3.74**	0.4	<0.02	<0.02	0.22	1.08	0.03	0.48	0.78	<0.05	<0.02	<0.02	-
MW252	OCA	26 Oct 2023	0207_QC203_231026	OMP Oct 2023	0.73	<0.01	-	0.15	***8.7***	-	0.61	<0.01	**2.5**	0.37	<0.01	<0.01	0.27	0.92	0.024	0.35	0.58	<0.02	<0.02	<0.01	<0.02
MW252	OCA	26 Oct 2023	0207_MW252_231026	OMP Oct 2023	0.84	<0.02	-	0.12	***9.91***	-	0.52	-	**2.17**	0.3	<0.02	<0.02	0.21	0.65	0.02	0.36	0.50	<0.05	<0.02	<0.02	-
MW252	OCA	04 Apr 2024	0207_MW252_240404	OMP Apr 2024	0.79	<0.02	-	0.20	***11.3***	-	0.74	-	**3.33**	0.4	<0.02	<0.02	0.33	1.18	0.03	0.45	0.75	<0.05	<0.02	<0.02	-
MW252	OCA	04 Apr 2024	0207_QC105_240404	OMP Apr 2024	0.71	<0.02	-	0.25	***11.5***	-	0.86	-	**4.43**	0.3	<0.02	<0.02	0.35	1.37	0.03	0.45	0.77	<0.05	<0.02	<0.02	-
MW252	OCA	04 Apr 2024	0207_QC205_240404	OMP Apr 2024	0.84	<0.01	-	0.16	***7.8***	-	0.77	<0.01	**3.1**	0.41	<0.01	<0.01	0.31	1.1	0.023	0.41	0.67	<0.02	<0.02	<0.01	<0.02
MW252	OCA	10 Oct 2024	0207_MW252_241010	OMP Oct 2024	2.48	<0.09[#2]	-	<0.88[#2]	***49.5***	-	2.12	-	**11.1**	<4.4[#2]	<0.09[#2]	<0.09[#2]	<0.88[#2]	3.27	<0.88[#2]	<0.88[#2]	1.15	<0.22[#2]	<0.09[#2]	<0.09[#2]	<0.22[#2]
MW255	OCA	18 Oct 2018	AACO-MWO-A-LA-181018	OMP Oct 2018	0.02	<0.02	-	<0.02	*0.03*	-	<0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	23 Oct 2019	0207_MW255_191023	OMP Oct 2019	0.02	<0.02	-	<0.02	*0.04*	-	0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW255	OCA	26 Mar 2020	0207_MW255_200326	OMP Apr 2020	0.02	<0.02	-	<0.02	***0.06***	-	0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	21 Oct 2020	0207_MW255_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	***0.07***	-	0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	13 Apr 2021	0207_QC142_210413	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.04***	-	0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	13 Apr 2021	0207_MW255_210413	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.04***	-	0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	13 Apr 2021	0207_QC242_210413	OMP Apr 2021	0.02	<0.01	-	<0.01	***0.042***	-	0.019	<0.01	**0.11**	<0.05	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW255	OCA	15 Oct 2021	0207_MW255_211015	OMP Oct 2021	0.03	<0.02	-	<0.02	***0.07***	-	0.03	-	**0.15**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	15 Apr 2022	0207_MW255_220415	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	26 Oct 2023	0207_MW255_231026	OMP Oct 2023	0.03	<0.02	-	<0.02	***0.10***	-	0.03	-	**0.19**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	OCA	10 Apr 2024	0207_MW255_240410	OMP Apr 2024	0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.13**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	22 Oct 2018	AACO-MWO-B-LA-181022	OMP Oct 2018	<0.02	<0.02	-	<0.02	***0.23***	-	<0.02	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	23 Oct 2019	0207_MW257_191023	OMP Oct 2019	<0.02	<0.02	-	<0.02	***0.17***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	26 Mar 2020	0207_QC217_200326	OMP Apr 2020	0.012	<0.01	-	<0.01	***0.18***	-	0.012	<0.01	**0.17**	<0.05	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW257	OCA	26 Mar 2020	0207_MW257_200326	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.23***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	26 Mar 2020	0207_QC117_200326	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.27***	-	<0.02	-	**0.20**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	21 Oct 2020	0207_MW257_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	17 Apr 2021	0207_MW257_210417	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	14 Oct 2021	0207_MW257_211014	OMP Oct 2021	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	15 Apr 2022	0207_MW257_220415	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.03[#2]	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	27 Oct 2022	0207_MW257_221027	OMP Oct 2022	<0.02	<0.02	-	<0.02	***0.11***	-	<0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	14 Apr 2023	0207_MW257_230414	OMP Apr 2023	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	26 Oct 2023	0207_MW257_231026	OMP Oct 2023	<0.04[#2]	<0.02	-	<0.02	***0.09***	-	<0.02	-	<0.11[#2]	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	10 Apr 2024	0207_MW257_240410	OMP Apr 2024	<0.02	<0.02	-	<0.02	***0.11***	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	OCA	09 Oct 2024	0207_MW257_241009	OMP Oct 2024	<0.05[#2]	<0.02	-	<0.02	***0.13***	-	<0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW262	OCA	18 Oct 2018	AACO-MWO-D-UA-18101	OMP Oct 2018	0.03	<0.02	-	<0.02	***0.13***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	21 Oct 2019	0207_MW262_191024	OMP Oct 2019	0.04	<0.02	-	<0.02	***0.19***	-	0.04	-	**0.27**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	24 Mar 2020	0207_MW262_200323	OMP Apr 2020	0.05	<0.02	-	<0.02	***0.34***	-	0.04	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	21 Oct 2020	0207_MW262_201021	OMP Oct 2020	0.07	<0.02	-	<0.02	***0.06***	-	0.02	-	**0.13**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	19 Apr 2021	0207_QC254_210419	OMP Apr 2021	0.049	<0.01	-	0.013	***0.2***	-	0.039	<0.01	**0.23**	<0.05	<0.01	<0.01	0.013	0.038	<0.01	0.022	<0.02	<0.02	<0.02	<0.01	<0.02
MW262	OCA	19 Apr 2021	0207_MW262_210419	OMP Apr 2021	0.05	<0.02	-	0.02	***0.26***	-	0.04	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	19 Apr 2021	0207_QC154_210419	OMP Apr 2021	0.05	<0.02	-	<0.02	***0.28***	-	0.04	-	**0.25**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	14 Oct 2021	0207_MW262_211014	OMP Oct 2021	0.05	<0.02	-	<0.02	***0.18***	-	0.05	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	16 Apr 2022	0207_MW262_220416	OMP Apr 2022	0.05	<0.02	-	<0.02	***0.27***	-	0.04	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	02 Nov 2022	0207_MW262_221102	OMP Oct 2022	0.08	<0.02	-	<0.02	***0.14***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	14 Apr 2023	0207_MW262_230414	OMP Apr 2023	0.09	<0.02	-	0.03	***0.34***	-	0.06	-	**0.37**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	26 Oct 2023	0207_MW262_231026	OMP Oct 2023	0.08	<0.02	-	<0.02	***0.23***	-	0.06	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	11 Apr 2024	0207_MW262_240411	OMP Apr 2024	0.05	<0.02	-	<0.02	***0.16***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	OCA	09 Oct 2024	0207_MW262_241009	OMP Oct 2024	0.10	<0.02	-	0.03	***0.38***	-	0.07	-	**0.36**	<0.1	<0.02	<0.02	0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05
MW265	OCA	25 Oct 2018	AACO-MWO-F-AL-181025	OMP Oct 2018	<0.02	<0.02	-	<0.02	***0.05***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW265	OCA	23 Mar 2020	0207_MW265_200323	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW265	OCA	12 Apr 2021	0207_MW265_210412	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW265	OCA	16 Apr 2022	0207_MW265_220416	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW265	OCA	14 Apr 2023	0207_MW265_230414	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW265	OCA	11 Apr 2024	0207_MW265_240411	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW266	OCA	23 Mar 2020	0207_MW266_200323	OMP Apr 2020	0.76	<0.02	-	0.22	***3.88***	-	0.73	-	**3.64**	0.3	<0.02	<0.02	0.24	1.27	<0.02	0.31	0.28	<0.05	<0.02	<0.02	-
MW266	OCA	07 Apr 2020	0207_MWO-G-AL_200407	OMP Apr 2020	0.17	<0.02	-	0.11	***1.20***	-	0.40	-	**1.68**	<0.1	<0.02	<0.02	0.06	0.57	<0.02	0.13	0.11	<0.05	<0.02	<0.02	-
MW266	OCA	23 Mar 2021	0207_MWO-G-AL_210323	OMP Apr 2021	0.18	<0.02	-	0.05	***0.85***	-	0.16	-	**0.87**	<0.1	<0.02	<0.02	0.05	0.32	<0.02	0.08	0.07	<0.05	<0.02	<0.02	-
MW266	OCA	20 Apr 2021	0207_MW266_210420	OMP Apr 2021	0.78	<0.02	-	0.22	***3.19***	-	0.69	-	**3.38**	0.24	<0.02	<0.02	0.23	1.28	<0.02	0.34	0.32	<0.05	<0.02	<0.02	-
MW266	OCA	08 Feb 2022	0207_MW266_220208	OMR Feb 2022	0.40	<0.02	-	0.17	***2.53***	-	0.51	-	**2.07**	0.1	<0.02	<0.02	0.14	0.78	<0.02	0.21	0.15	<0.05	<0.02	<0.02	-
MW266	OCA	16 Apr 2022	0207_MW266_220416	OMP Apr 2022	0.59	<0.02	-	0.18	***3.08***	-	0.51	-	**2.60**	0.2	<0.02	<0.02	0.16	0.96	<0.02	0.27	0.22	<0.05	<0.02	<0.02	-
MW266	OCA	13 Apr 2023	0207_MW266_230413	OMP Apr 2023	1.05	<0.02	-	0.36	***4.72***	-	0.86	-	**3.76**	0.3	<0.02	<0.02	0.26	1.51	<0.02	0.39	0.32	<0.05	<0.02	<0.02	-
MW266	OCA	27 Apr 2023	0207_MWO-G-AL_230427	OMP Apr 2023	0.43	<0.02	-	0.16	***2.34***	-	0.43	-	**1.89**	0.1	<0.02	<0.02	0.14	0.69	<0.02	0.20	0.15	<0.05	<0.02	<0.02	-
MW266	OCA	11 Apr 2024	0207_MW266_240411	OMP Apr 2024	0.43	<0.02	-	0.16	***2.93***	-	0.39	-	**2.19**	0.2	<0.02	<0.02	0.15	0.86	<0.02	0.23	0.22	<0.05	<0.02	<0.02	-
MW267	OCA	25 Mar 2020	0207_MW267_200325	OMP Apr 2020	<0.05[#2]	<0.05[#2]	-	<0.05[#2]	<0.05[#2]	-	<0.05[#2]	-	<0.05[#2]	<0.2[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05[#2]	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW267	OCA	15 Apr 2021	0207_MW267_210415	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.04***	-	<0.02	-	<0.02	<0.2[#2]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.30[#2]	<0.05	<0.02	<0.02	-
MW267	OCA	13 Apr 2022	0207_MW267_220413	OMP Apr 2022	0.11	<0.02	-	<0.02	***0.25***	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.05	<0.05	<0.02	<0.02	-
MW267	OCA	18 Apr 2023	0207_MW267_230418	OMP Apr 2023	0.11	<0.02	-	<0.02	***0.11***	-	0.05	-	**0.16**	<0.1	<0.02	<0.02	<0.02	0.13	<0.02	0.02	0.08	<0.05	<0.02	<0.02	-
MW267	OCA	08 Apr 2024	0207_MW267_240408	OMP Apr 2024	0.03	<0.02	-	<0.02	***0.23***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW268	OCA	25 Mar 2020	0207_MW268_200325	OMP Apr 2020	0.06	<0.02	-	<0.02	***0.33***	-	0.06	-	**0.40**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW268	OCA	15 Apr 2021	0207_MW268_210415	OMP Apr 2021	0.04	<0.02	-	<0.02	***0.18***	-	0.04	-	**0.25**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW268	OCA	13 Apr 2022	0207_MW268_220413	OMP Apr 2022	0.04	<0.02	-	<0.02	***0.15***	-	0.05	-	**0.39**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW268	OCA	18 Apr 2023	0207_MW268_230418	OMP Apr 2023	0.13	<0.02	-	0.02	***0.23***	-	0.10	-	**0.50**	<0.1	<0.02	<0.02	<0.02	0.14	<0.02	0.02	0.04	<0.05	<0.02	<0.02	-
MW268	OCA	08 Apr 2024	0207_MW268_240408	OMP Apr 2024	0.13	<0.02	-	<0.02	***0.14***	-	0.13	-	**0.60**	<0.1	<0.02	<0.02	<0.02	0.21	<0.02	0.02	0.04	<0.05	<0.02	<0.02	-
MW269	WCM	19 Oct 2018	AACO-MWO-H-WCM-181	OMP Oct 2018	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.04	<0.05	<0.02	<0.02	-
MW269	WCM	25 Oct 2019	0207_MW269_191025	OMP Oct 2019	<0.02	<0.02	-	<0.02	***0.07***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	25 Mar 2020	0207_MW269_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.07***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.16[#2]	<0.05	<0.02	<0.02	-
MW269	WCM	21 Oct 2020	0207_MW269_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	***0.04***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	15 Apr 2021	0207_MW269_210415	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	15 Oct 2021	0207_MW269_211015	OMP Oct 2021	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	13 Apr 2022	0207_MW269_220413	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.05***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	02 Nov 2022	0207_MW269_221102	OMP Oct 2022	<0.02	<0.02	-	<0.02	***0.06***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	18 Apr 2023	0207_MW269_230418	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	25 Oct 2023	0207_MW269_231025	OMP Oct 2023	<0.02	<0.02	-	<0.02	***0.05***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	08 Apr 2024	0207_MW269_240408	OMP Apr 2024	<0.02	<0.02	-	<0.02	***0.04***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	WCM	09 Oct 2024	0207_MW269_241009	OMP Oct 2024	<0.02	<0.02	-	<0.02	***0.04***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW271	MRV	25 Mar 2020	0207_MW271_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.04[#2]	<0.05	<0.02	<0.02	-
MW271	MRV	15 Apr 2021	0207_MW271_210415	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW271	MRV	13 Apr 2022	0207_MW271_220413	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW271	MRV	10 May 2023	0207_MW271_230510	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW271	MRV	10 Apr 2024	0207_MW271_240410	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	0.02	0.02	<0.02	<0.01	0.03	<0.05	<0.02	<0.02	-
MW272	OCA	23 Oct 2019	0207_MW272_191023	OMP Oct 2019	0.06	<0.02	-	<0.02	***0.10***	-	0.06	-	**0.39**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	OCA	26 Mar 2020	0207_MW272_200326	OMP Apr 2020	0.06	<0.02	-	<0.02	***0.16***	-	0.08	-	**0.42**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	OCA	21 Oct 2020	0207_QC235_201021	OMP Oct 2020	0.051	<0.01	-	<0.01	***0.14***	-	0.05	<0.01	**0.37**	<0.05	<0.01	<0.01	<0.01	0.078	<0.01	0.011	0.02	<0.02	<0.02	<0.01	<0.02
MW272	OCA	21 Oct 2020	0207_QC135_201021	OMP Oct 2020	0.07	<0.02	-	<0.02	***0.19***	-	0.08	-	**0.46**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	OCA	21 Oct 2020	0207_MW272_201021	OMP Oct 2020	0.07	<0.02	-	<0.02	***0.21***	-	0.07	-	**0.44**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	OCA	19 Apr 2021	0207_MW272_210419	OMP Apr 2021	0.08	<0.02	-	<0.02	***0.16***	-	0.08	-	**0.42**	<0.10	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW272	OCA	15 Oct 2021	0207_MW272_211015	OMP Oct 2021	0.09	<0.02	-	0.02	***0.21***	-	0.10	-	**0.55**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	OCA	15 Apr 2022	0207_QC105_220416	OMP Apr 2022	0.04	<0.02	-	<0.02	***0.13***	-	0.04	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	OCA	16 Apr 2022	0207_QC205_220416	OMP Apr 2022	0.038	<0.01	-	<0.01	*0.065*	-	0.04	<0.01	**0.25**	<0.05	<0.01	<0.01	0.011	0.07	<0.01	<0.01	0.026	<0.02	<0.02	<0.01	<0.02
MW272	OCA	16 Apr 2022	0207_MW272_220416	OMP Apr 2022	0.04	<0.02	-	<0.02	***0.10***	-	0.04	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	OCA	27 Oct 2022	0207_MW272_221027	OMP Oct 2022	0.05	<0.02	-	<0.02	***0.11***	-	0.05	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	OCA	13 Apr 2023	0207_QC207_230413	OMP Apr 2023	0.054	<0.01	-	<0.01	***0.11***	-	0.064	<0.01	**0.39**	<0.05	<0.01	<0.01	<0.01	0.077	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW272	OCA	13 Apr 2023	0207_MW272_230413	OMP Apr 2023	0.08	<0.02	-	<0.02	***0.17***	-	0.08	-	**0.42**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	OCA	13 Apr 2023	0207_QC107_230413	OMP Apr 2023	0.09	<0.02	-	0.02	***0.18***	-	0.10	-	**0.46**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW272	OCA	26 Oct 2023	0207_MW272_231026	OMP Oct 2023	0.07	<0.02	-	<0.02	***0.16***	-	0.06	-	**0.38**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW272	OCA	08 Apr 2024	0207_MW272_240408	OMP Apr 2024	0.05	<0.02	-	<0.02	***0.11***	-	0.06	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	OCA	09 Oct 2024	0207_MW272_241009	OMP Oct 2024	0.07	<0.02	-	<0.02	***0.14***	-	0.08	-	**0.44**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.02	0.02	<0.05	<0.02	<0.02	<0.05
MW273	WCM	26 Mar 2020	0207_MW273_200326	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW273	WCM	19 Apr 2021	0207_QC152_210419	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW273	WCM	19 Apr 2021	0207_MW273_210419	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW273	WCM	19 Apr 2021	0207_QC252_210419	OMP Apr 2021	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
MW273	WCM	16 Apr 2022	0207_MW273_220416	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW273	WCM	13 Apr 2023	0207_MW273_230413	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW273	WCM	08 Apr 2024	0207_MW273_240408	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW274	OCA	25 Mar 2020	0207_MW274_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.01***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW274	OCA	17 Apr 2021	0207_MW274_210417	OMP Apr 2021	0.07	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW274	OCA	15 Apr 2022	0207_MW274_220415	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.02[#2]	-	<0.02	-	<0.02[#2]	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#2]	<0.02	<0.06[#2]	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW274	OCA	14 Apr 2023	0207_MW274_230414	OMP Apr 2023	0.10	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW274	OCA	11 Apr 2024	0207_MW274_240411	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW275	MRV	25 Mar 2020	0207_MW275_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW275	MRV	17 Apr 2021	0207_MW275_210417	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW275	MRV	15 Apr 2022	0207_MW275_220415	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.02[#2]	-	<0.02	-	<0.02[#2]	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#2]	<0.02	<0.06[#2]	<0.02	<0.02	-
MW275	MRV	14 Apr 2023	0207_QC108_230414	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW275	MRV	14 Apr 2023	0207_MW275_230414	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW275	MRV	14 Apr 2023	0207_QC208_230414	OMP Apr 2023	<0.01	<0.01	-	<0.01	<0.02	-	<0.01	<0.01	0.013	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW275	MRV	11 Apr 2024	0207_MW275_240411	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW276	OCA	23 Oct 2019	0207_MW276_191023	OMP Oct 2019	0.84	<0.02	-	0.48	***9.26***	-	1.07	-	**8.54**	0.2	<0.02	<0.02	0.25	1.58	<0.02	0.52	0.32	<0.05	<0.02	<0.02	-
MW276	OCA	23 Mar 2020	0207_QC118_200323	OMP Apr 2020	1.09	<0.04[#2]	-	0.73	***12.7***	-	1.45	-	**9.23**	<0.2[#2]	<0.04[#2]	<0.04[#2]	0.27	1.65	<0.04[#2]	**0.61**	0.32	<0.10[#2]	<0.04[#2]	<0.04[#2]	-
MW276	OCA	26 Mar 2020	0207_MW276_200326	OMP Apr 2020	1.24	<0.02	-	1.04	***12.7***	-	1.52	-	**8.05**	0.3	<0.02	<0.02	0.35	2.24	<0.02	**0.69**	0.41	<0.05	<0.02	<0.02	-
MW276	OCA	26 Mar 2020	0207_MW276_210419	OMP Apr 2021	0.83	<0.02	-	0.66	***11.5***	-	1.17	-	**8.05**	0.3	<0.02	<0.02	0.26	1.57	<0.02	**0.57**	0.35	<0.05	<0.02	<0.02	-
MW276	OCA	19 Apr 2021	0207_QC153_210419	OMP Apr 2021	1.01	<0.05[#2]	-	0.63	***13.5***	-	1.33	-	**9.08**	0.4	<0.05[#2]	<0.05[#2]	0.30	1.91	<0.05[#2]	**0.66**	0.41	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW276	OCA	19 Apr 2021	0207_QC253_210419	OMP Apr 2021	0.84	<0.01	-	0.4	***7.8***	-	0.84	<0.01	**6.3**	0.27	<0.01	<0.01	0.2	1.2	<0.01	0.42	0.29	<0.02	<0.02	<0.01	<0.02
MW276	OCA	14 Oct 2021	0207_MW276_211014	OMP Oct 2021	1.09	<0.02	-	0.71	***11.6***	-	1.38	-	**8.98**	0.4	<0.02	<0.02	0.34	1.94	<0.02	**0.68**	0.47	<0.06[#2]	<0.02	<0.02	-
MW276	OCA	15 Apr 2022	0207_MW276_220415	OMP Apr 2022	0.83	<0.02	-	0.60	***11.2***	-	1.00	-	**7.78**	0.3	<0.02	<0.02	0.25	1.67	<0.02	0.55	0.34	<0.05	<0.02	<0.02	-
MW276	OCA	24 Nov 2022	0207_MW276_221124	OMP Oct 2022	0.82	<0.02	-	0.51	***9.39***	-	1.12	-	**7.16**	0.2	<0.02	<0.02	0.22	1.65	<0.02	0.54	0.32	<0.05	<0.02	<0.02	-
MW276	OCA	13 Apr 2023	0207_MW276_230413	OMP Apr 2023	1.03	<0.02	-	0.67	***10.4***	-	1.19	-	**8.05**	0.3	<0.02	<0.02	0.28	1.72	<0.02	**0.57**	0.35	<0.06[#2]	<0.02	<0.02	-
MW276	OCA	26 Oct 2023	0207_MW276_231026	OMP Oct 2023	0.93	<0.02	-	0.51	***11.7***	-	0.98	-	**7.69**	0.3	<0.02	<0.02	0.23	1.27	<0.02	**0.61**	0.34	<0.05	<0.02	<0.02	-
MW276	OCA	11 Apr 2024	0207_MW276_240411	OMP Apr 2024	0.52	<0.02	-	0.37	***9.22***	-	0.71	-	**5.91**	0.2	<0.02	<0.02	0.18	1.17	<0.02	0.38	0.24	<0.05	<0.02	<0.02	-
MW276	OCA	09 Oct 2024	0207_MW276_241009	OMP Oct 2024	0.83	<0.05[#2]	-	0.34	***9.10***	-	0.90	-	**6.42**	0.3	<0.05[#2]	<0.05[#2]	0.22	1.32	<0.05[#2]	0.46	0.28	<0.12[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]
MW278	OCA	25 Mar 2020	0207_MW278_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW278	OCA	16 Apr 2021	0207_MW278_210416	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW278	OCA	16 Apr 2022	0207_MW278_220416	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW278	OCA	14 Apr 2023	0207_MW278_230414	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW278	OCA	11 Apr 2024	0207_MW278_240411	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW280	OCA	24 Mar 2020	0207_MW280_200324	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.09***	-	<0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW280	OCA	17 Apr 2021	0207_MW280_210417	OMP Apr 2021	0.04	<0.02	-	<0.02	***0.09***	-	0.02	-	**0.16**	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW280	OCA	16 Apr 2022	0207_MW280_220414	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.12***	-	<0.02	-	**0.16**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW280	OCA	14 Apr 2023	0207_MW280_230414	OMP Apr 2023	<0.02	<0.02	-	<0.02	***0.11***	-	<0.02	-	**0.13**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW280	OCA	11 Apr 2024	0207_MW280_240411	OMP Apr 2024	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW281	OCA	02 Apr 2020	0207_MW281_200402	OMP Apr 2020	0.35	<0.02	-	0.13	***2.22***	-	0.31	-	**1.78**	<0.10	<0.02	<0.02	0.12	0.40	<0.02	0.23	0.09	<0.05	<0.02	<0.02	-
MW281	OCA	20 Apr 2021	0207_MW281_210420	OMP Apr 2021	0.26	<0.02	-	0.14	***2.35***	-	0.28	-	**1.33**	<0.1	<0.02	<0.02	0.10	0.38	<0.02	0.20	0.10	<0.05	<0.02	<0.02	-
MW281	OCA	14 Apr 2022	0207_MW281_220414	OMP Apr 2022	0.27	<0.02	-	0.13	***1.98***	-	0.27	-	**1.38**	<0.1	<0.02	<0.02	0.08	0.29	<0.02	0.20	0.07	<0.05	<0.02	<0.02	-
MW281	OCA	14 Apr 2023	0207_MW281_230414	OMP Apr 2023	0.36	<0.02	-	0.13	***2.34***	-	0.26	-	**1.41**	<0.1	<0.02	<0.02	0.08	0.30	<0.02	0.17	0.07	<0.05	<0.02	<0.02	-
MW281	OCA	11 Apr 2024	0207_MW281_240411	OMP Apr 2024	0.16	<0.02	-	0.07	***1.66***	-	0.14	-	**0.81**	<0.1	<0.02	<0.02	0.05	0.20	<0.02	0.12	0.06	<0.05	<0.02	<0.02	-
MW282	OCA	24 Mar 2020	0207_MW282_200324	OMP Apr 2020	0.07	<0.02	-	<0.02	***0.51***	-	0.06	-	**0.39**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW282	OCA	15 Apr 2021	0207_QC247_210415	OMP Apr 2021	0.084	<0.01	-	0.01	***0.42***	-	0.056	<0.01	**0.4**	<0.05	<0.01	<0.01	<0.01	0.017	<0.01	0.019	<0.02	<0.02	<0.02	<0.01	<0.02
MW282	OCA	15 Apr 2021	0207_QC147_210415	OMP Apr 2021	0.07	<0.02	-	<0.02	***0.49***	-	0.06	-	**0.37**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW282	OCA	15 Apr 2021	0207_MW282_210415	OMP Apr 2021	0.08	<0.02	-	<0.02	***0.54***	-	0.07	-	**0.43**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW282	OCA	14 Apr 2022	0207_QC104_220415	OMP Apr 2022	0.05	<0.02	-	<0.02	***0.80***	-	0.03	-	**0.34**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW282	OCA	15 Apr 2022	0207_QC204_220415	OMP Apr 2022	0.05	<0.01	-	<0.01	***0.75***	-	0.038	<0.01	**0.35**	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW282	OCA	15 Apr 2022	0207_MW282_220415	OMP Apr 2022	0.06	<0.02	-	<0.02	***0.86***	-	0.04	-	**0.34**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW282	OCA	14 Apr 2023	0207_MW282_230414	OMP Apr 2023	0.15	<0.02	-	0.03	***1.27***	-	0.10	-	**0.83**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW282	OCA	11 Apr 2024	0207_MW282_240411	OMP Apr 2024	0.02	<0.02	-	<0.02	***0.68***	-	0.02	-	**0.28**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW283	OCA	25 Mar 2020	0207_MW283_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW283	OCA	20 Apr 2021	0207_MW283_210420	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW283	OCA	13 Apr 2022	0207_MW283_220413	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW283	OCA	18 Apr 2023	0207_MW283_230418	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW283	OCA	11 Apr 2024	0207_MW283_240411	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW285	OCA	23 Oct 2018	AACO-MWO-T-AL-181023	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW285	OCA	23 Mar 2020	0207_MW285_200323	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW285	OCA	15 Apr 2021	0207_QC148_210415	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW285	OCA	15 Apr 2021	0207_MW285_210415	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW285	OCA	15 Apr 2021	0207_QC248_210415	OMP Apr 2021	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
MW285	OCA	16 Apr 2022	0207_MW285_220416	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW285	OCA	14 Apr 2023	0207_MW285_230414	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	0.02	<0.05	<0.02	<0.02	-
MW285	OCA	11 Apr 2024	0207_MW285_240411	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW288	OCA	25 Mar 2020	0207_MW288_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW288	OCA	21 Apr 2021	0207_MW288_210421	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW288	OCA	21 Apr 2022	0207_MW288_220421	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW288	OCA	18 Apr 2023	0207_MW288_230418	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW288	OCA	10 Apr 2024	0207_MW288_240410	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW289	WCM	25 Mar 2020	0207_MW289_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.02[#2]	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#2]	<0.02	<0.06[#2]	<0.02	<0.02	-
MW289	WCM	21 Apr 2021	0207_MW289_210421	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW289	WCM	21 Apr 2022	0207_MW289_220421	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW290	OCA	25 Mar 2020	0207_MW290_200325	OMP Apr 2020	0.02	<0.02	-	<0.02	***0.02***	-	0.02	-	**0.22**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW290	OCA	21 Apr 2021	0207_MW290_210421	OMP Apr 2021	0.02	<0.02	-	<0.02	***0.02***	-	0.02	-	**0.23**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW290	OCA	21 Apr 2022	0207_MW290_220421	OMP Apr 2022	0.21	<0.02	-	<0.02	<0.03[#2]	-	0.19	-	**0.42**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW290	OCA	19 Apr 2023	0207_MW290_230419	OMP Apr 2023	0.07	<0.02	-	<0.02	***0.03***	-	0.06	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW290	OCA	09 Apr 2024	0207_MW290_240409	OMP Apr 2024	0.05	<0.02	-	<0.02	***0.02***	-	0.03	-	**0.13**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW291	WCM	25 Mar 2020	0207_MW291_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW291	WCM	22 Oct 2020	0207_MW291_201022	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW291	WCM	21 Apr 2021	0207_MW291_210421	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW291	WCM	21 Apr 2022	0207_MW291_220421	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.01***	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW291	WCM	19 Apr 2023	0207_MW291_230419	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW291	WCM	09 Apr 2024	0207_MW291_240409	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW292	OCA	25 Mar 2020	0207_MW292_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	***0.16***	-	<0.02	-	**0.16**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW292	OCA	19 Apr 2021	0207_MW292_210419	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.14***	-	<0.02	-	**0.17**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW292	OCA	14 Apr 2022	0207_QC202_220414	OMP Apr 2022	<0.01	<0.01	-	<0.01	***0.11***	-	0.012	<0.01	**0.15**	<0.05	<0.01	<0.01	<0.01	0.017	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW292	OCA	14 Apr 2022	0207_QC102_220414	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.16***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW292	OCA	14 Apr 2022	0207_MW292_220414	OMP Apr 2022	<0.02	<0.02	-	<0.02	***0.16***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW292	OCA	17 Apr 2023	0207_QC209_230417	OMP Apr 2023	0.01	<0.01	-	<0.01	***0.088***	-	0.012	<0.01	**0.13**	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW292	OCA	17 Apr 2023	0207_MW292_230417	OMP Apr 2023	<0.02	<0.02	-	<0.02	***0.13***	-	<0.02	-	**0.15**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW292	OCA	17 Apr 2023	0207_QC109_230417	OMP Apr 2023	<0.02	<0.02	-	<0.02	***0.17***	-	<0.02	-	**0.20**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW292	OCA	09 Apr 2024	0207_MW292_240409	OMP Apr 2024	<0.02	<0.02	-	<0.02	***0.17***	-	<0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW293	WCM	19 Oct 2018	AACO-MWO-X-WCM-181	OMP Oct 2018	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW293	WCM	25 Mar 2020	0207_MW293_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW293	WCM	19 Apr 2021	0207_MW293_210419	OMP Apr 2021	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW293	WCM	14 Apr 2022	0207_MW293_220414	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.02[#2]	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW293	WCM	17 Apr 2023	0207_MW293_230417	OMP Apr 2023	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW293	WCM	09 Apr 2024	0207_MW293_240409	OMP Apr 2024	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW294	OCA	25 Mar 2020	0207_MW294_200325	OMP Apr 2020	0.10	<0.02	-	0.04	***0.66***	-	0.10	-	**0.66**	0.5	0.02	<0.02	0.20	0.37	0.08	0.16	0.77	<0.05	<0.02	<0.02	-
MW294	OCA	15 Apr 2021	0207_MW294_210415	OMP Apr 2021	0.08	<0.02	-	0.04	***0.65***	-	0.10	-	**0.62**	0.4	0.02	<0.02	0.22	0.36	0.05	0.13	0.77	<0.05	<0.02	<0.02	-
MW294	OCA	15 Apr 2022	0207_MW294_220415	OMP Apr 2022	0.06	<0.02	-	<0.05[#2]	***1.08***	-	0.06	-	**0.58**	0.3	<0.02	<0.02	0.16	0.32	<0.02	0.15	0.34	<0.05	<0.02	<0.02	-
MW294	OCA	18 Apr 2023	0207_MW294_230418	OMP Apr 2023	0.03	<0.02	-	<0.02	***0.58***	-	0.02	-	**0.17**	0.1	<0.02	<0.02	0.05	0.10	0.20	0.05	0.13	<0.05	<0.02	<0.02	-
MW294	OCA	08 Apr 2024	0207_MW294_240408	OMP Apr 2024	0.07	<0.02	-	0.04	***0.64***	-	0.08	-	**0.66**	0.4	<0.02	<0.02	0.17	0.36	0.05	0.17	0.52	<0.05	<0.02	<0.02	-
MW295	WCM	25 Mar 2020	0207_MW295_200325	OMP Apr 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.06[#2]	<0.05	<0.02	<0.02	-
MW295	WCM	21 Oct 2020	0207_MW295_201021	OMP Oct 2020	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW295	WCM	15 Apr 2021	0207_MW295_210415	OMP Apr 2021	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW295	WCM	13 Apr 2022	0207_QC101_220413	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW295	WCM	13 Apr 2022	0207_MW295_220413	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW295	WCM	13 Apr 2022	0207_QC201_220413	OMP Apr 2022	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**					
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																					
MW295	WCM	18 Apr 2023	0207_MW295_230418	OMP Apr 2023	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW295	WCM	08 Apr 2024	0207_MW295_240408	OMP Apr 2024	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW299	OCA	25 Oct 2018	AACO-MWS1-B-181025	OMP Oct 2018	3.02	<0.02	-	1.36	***29.3***	-	3.34	-	**11.5**	0.9	<0.02	<0.02	1.27	6.17	<0.02	**2.58**	1.43	<0.05	<0.02	<0.02	-
MW299	OCA	25 Oct 2018	AACO_QC207_181025	OMP Oct 2018	2.8	<0.01	-	1.1	***31***	-	2.6	<0.01	**15**	1	<0.01	<0.01	1	5.6	<0.01	**2.2**	1.3	<0.02	<0.02	<0.01	<0.02
MW299	OCA	25 Oct 2018	AACO-QC107-181025	OMP Oct 2018	2.90	<0.02	-	1.44	***34.4***	-	3.53	-	**12.9**	0.9	<0.02	<0.02	1.30	5.99	<0.02	**2.55**	1.33	<0.05	<0.02	<0.02	-
MW299	OCA	10 Jul 2019	0207_MWS1-B_190710	OMP July 2019	3.57	<0.0005	-	0.589	***8.48***	-	3.58	-	**12.6**	0.238	<0.0005	<0.0005	1.27	8.32	0.0030	**2.18**	1.84	<0.0005	<0.0005	<0.0005	-
MW299	OCA	23 Oct 2019	0207_MW299_191023	OMP Oct 2019	1.79	<0.02	-	0.06	***0.34***	-	2.70	-	**7.36**	1.1	<0.02	<0.02	0.48	3.02	<0.02	0.40	0.74	<0.05	<0.02	<0.02	-
MW299	OCA	30 Oct 2019	0207_MWS1-B_191030	OMP Oct 2019	3.93	<0.0005	-	0.610	***7.47***	-	3.07	-	**12.7**	0.392	<0.0005	<0.0005	1.30	8.22	0.0030	**2.00**	1.77	<0.0005	<0.0005	<0.0005	-
MW299	OCA	30 Oct 2019	0207_QC1mw_191030	OMP Oct 2019	4.02	<0.0005	-	0.656	***8.01***	-	3.31	-	**13.1**	0.563	<0.0005	<0.0005	1.36	9.52	0.0030	**2.25**	1.90	<0.0005	<0.0005	<0.0005	-
MW299	OCA	05 Mar 2020	0207_QC1MW_200305	OMP Apr 2020	3.67	<0.0016[#2]	-	0.523	***6.74***	-	2.61	-	**9.13**	0.230	<0.0016[#2]	<0.0016[#2]	1.47	7.01	0.0027	**1.68**	1.68	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW299	OCA	05 Mar 2020	0207_MWS1-B_200305	OMP Apr 2020	3.39	<0.0016[#2]	-	0.698	***8.01***	-	3.51	-	**12.0**	0.190	<0.0016[#2]	<0.0016[#2]	1.31	7.69	0.0032	**1.92**	1.78	<0.0040[#2]	<0.0016[#2]	<0.0016[#2]	-
MW299	OCA	26 Mar 2020	0207_MW299_200326	OMP Apr 2020	4.18	<0.06[#2]	-	0.66	***11.6***	-	4.25	-	**15.6**	0.5	<0.06[#2]	<0.06[#2]	1.75	8.98	<0.06[#2]	**2.30**	2.05	<0.16[#2]	<0.06[#2]	<0.06[#2]	-
MW299	OCA	20 Oct 2020	0207_MW299_201020	OMP Oct 2020	4.27	<0.07[#2]	-	0.84	***8.94***	-	4.66	-	**17.5**	1.5	<0.07[#2]	<0.07[#2]	2.04	10.7	<0.07[#2]	**3.10**	2.28	<0.18[#2]	<0.07[#2]	<0.07[#2]	-
MW299	OCA	17 Apr 2021	0207_MW299_210417	OMP Apr 2021	4.04	<0.21[#2]	-	0.61	***10.7***	-	4.09	-	**13.7**	1.5	<0.21[#2]	<0.21[#2]	1.73	8.36	<0.21[#2]	**2.38**	2.08	<0.53[#2]	<0.21[#2]	<0.21[#2]	-
MW299	OCA	12 Oct 2021	0207_MW299_211012	OMP Oct 2021	7.50	<0.02	-	1.73	***15.4***	-	7.16	-	**31.3**	2.4	<0.02	<0.02	3.92	18.6	<0.02	**6.39**	4.27	<0.06[#2]	<0.02	<0.02	-
MW299	OCA	17 Apr 2022	0207_MW299_220417	OMP Apr 2022	17.7	<0.24[#2]	-	5.41	***88.5***	-	16.9	-	**80.8**	5.5	<0.24[#2]	<0.24[#2]	10.4	49.6	<0.24[#2]	***22.9***	10.6	<0.61[#2]	<0.24[#2]	<0.24[#2]	-
MW299	OCA	26 Oct 2022	0207_MW299_221026	OMP Oct 2022	17.6	<0.10[#2]	-	6.41	***107***	-	12.8	-	**70.3**	4.8	<0.10[#2]	<0.10[#2]	11.9	51.1	<0.10[#2]	***21.6***	9.32	<0.24[#2]	<0.10[#2]	<0.10[#2]	-
MW299	OCA	12 Apr 2023	0207_MW299_230412	OMP Apr 2023	10.1	<0.44[#2]	-	6.07	***234***	-	8.56	-	**43.3**	3.4	<0.44[#2]	<0.44[#2]	6.07	28.4	<0.44[#2]	**15.2**	6.07	<1.09[#2]	<0.44[#2]	<0.44[#2]	-
MW299	OCA	24 Oct 2023	0207_MW299_231024	OMP Oct 2023	17.6	<0.10[#2]	-	4.30	***91.7***	-	15.0	-	**71.4**	5.7	<0.10[#2]	<0.10[#2]	9.01	37.3	<0.10[#2]	**18.6**	10.3	<0.24[#2]	<0.10[#2]	<0.10[#2]	-
MW299	OCA	02 Apr 2024	0207_MW299_240402	OMP Apr 2024	1.98	<0.02	-	0.65	***28.2***	-	1.91	-	**8.92**	0.7	<0.02	<0.02	0.96	4.70	<0.02	**1.79**	1.34	<0.05	<0.02	<0.02	-
MW299	OCA	10 Oct 2024	0207_MW299_241010	OMP Oct 2024	4.20	<0.05[#2]	-	<0.49[#2]	***12.1***	-	3.32	-	**11.7**	0.8	<0.05[#2]	<0.05[#2]	1.41	6.98	<0.05[#2]	**1.70**	1.44	<0.12[#2]	<0.05[#2]	<0.05[#2]	<0.12[#2]
MW300	OCA	24 Oct 2018	AACO-MWS1-D-181024	OMP Oct 2018	16.5	<0.02	-	5.57	***46.1***	-	17.0	-	**51.6**	6.5	<0.02	<0.02	7.18	22.3	<0.02	**7.97**	8.15	<0.05	<0.02	<0.02	-
MW300	OCA	10 Jul 2019	0207_MWS1-D_190710	OMP July 2019	12.2	<0.0200[#2]	-	2.85	***32.3***	-	12.4	-	**38.9**	1.45	<0.0200[#2]	<0.0200[#2]	3.53	24.0	<0.0200[#2]	**6.38**	5.93	<0.0500[#2]	<0.0200[#2]	<0.0200[#2]	-
MW300	OCA	23 Oct 2019	0207_MW300_191023	OMP Oct 2019	16.6	<0.02	-	2.81	***28.7***	-	15.8	-	**52.2**	3.4	<0.02	<0.02	5.04	28.8	0.03	**7.26**	6.50	<0.05	<0.02	<0.02	-
MW300	OCA	30 Oct 2019	0207_MWS1-D_191030	OMP Oct 2019	1.49	<0.0005	-	0.280	***3.33***	-	1.18	-	**4.48**	0.159	0.0008	<0.0005	0.368	2.77	0.0108	**0.671**	0.576	<0.0005	<0.0005	<0.0005	-
MW300	OCA	05 Mar 2020	0207_MWS1-D_200305	OMP Apr 2020	16.5	<0.0160[#2]	-	4.59	***43.5***	-	16.0	-	**51.6**	0.866	<0.0160[#2]	<0.0160[#2]	5.30	32.8	<0.0160[#2]	**8.67**	7.61	<0.0400[#2]	<0.0160[#2]	<0.0160[#2]	-
MW300	OCA	24 Mar 2020	0207_MW300_200324	OMP Apr 2020	16.1	<0.19[#2]	-	4.07	***40.6***	-	14.5	-	**50.0**	3.3	<0.19[#2]	<0.19[#2]	5.24	27.2	<0.19[#2]	**7.33**	6.16	<0.48[#2]	<0.19[#2]	<0.19[#2]	-
MW300	OCA	07 Apr 2020	0207_MWS1-D_200407	OMP Apr 2020	12.1	<0.07[#2]	-	3.09	***41.0***	-	11.7	-	**42.6**	1.7	<0.07[#2]	<0.07[#2]	4.33	22.9	<0.07[#2]	**7.12**	5.23	<0.17[#2]	<0.07[#2]	<0.07[#2]	-
MW300	OCA	20 Oct 2020	0207_MW300_201020	OMP Oct 2020	11.2	<0.18[#2]	-	3.98	***45.6***	-	11.9	-	**48.2**	3.4	<0.18[#2]	<0.18[#2]	4.87	24.1	<0.18[#2]	**8.02**	5.16	<0.44[#2]	<0.18[#2]	<0.18[#2]	-
MW300	OCA	23 Mar 2021	0207_MWS1-D_210323	OMP Apr 2021	7.14	<0.07[#2]	-	2.96	***31.0***	-	7.53	-	**37.1**	2.8	<0.07[#2]	<0.07[#2]	3.41	18.7	<0.07[#2]	**6.58**	3.92	<0.18[#2]	<0.07[#2]	<0.07[#2]	-
MW300	OCA	17 Apr 2021	0207_QC251_210417	OMP Apr 2021	7.3	<0.01	-	2	***37***	-	6.1	<0.01	**34**	2.5	<0.01	<0.01	2.6	12	0.013	**5.1**	2.9	<0.02	<0.02	<0.01	<0.02
MW300	OCA	17 Apr 2021	0207_MW300_210417	OMP Apr 2021	9.74	<0.10[#2]	-	4.37	***59.8***	-	10.3	-	**47.8**	3.46	<0.10[#2]	<0.10[#2]	4.29	19.1	<0.10[#2]	**8.36**	4.59	<0.25[#2]	<0.10[#2]	<0.10[#2]	-
MW300	OCA	17 Apr 2021	0207_QC151_210417	OMP Apr 2021	8.93	<0.08[#2]	-	4.00	***63.3***	-	9.83	-	**42.4**	3.0	<0.08[#2]	<0.08[#2]	4.12	18.4	<0.08[#2]	**8.83**	4.42	<0.21[#2]	<0.08[#2]	<0.08[#2]	-
MW300	OCA	12 Oct 2021	0207_MW300_211012	OMP Oct 2021	9.58	<0.05[#2]	-	4.27	***44.1***	-	9.84	-	**42.9**	3.5	<0.05[#2]	<0.05[#2]	4.48	19.3	<0.05[#2]	**8.59**	4.75	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW300	OCA	08 Feb 2022	0207_MW300_220208	OMR Feb 2022	8.41	<0.05[#2]	-	3.95	***39.4***	-	10.2	-	**46.2**	3.0	<0.05[#2]	<0.05[#2]	4.50	18.9	<0.05[#2]	**9.60**	4.29	<0.12[#2]	<0.05[#2]	<0.05[#2]	-
MW300	OCA	17 Apr 2022	0207_MW300_220417	OMP Apr 2022	4.94	<0.27[#2]	-	4.14	***83.6***	-	5.35	-	**36.6**	1.4	<0.27[#2]	<0.27[#2]	2.89	12.4	<0.27[#2]	**9.03**	2.81	<0.68[#2]	<0.27[#2]	<0.27[#2]	-
MW300	OCA	26 Oct 2022	0207_MW300_221026	OMP Oct 2022	5.28	<0.10[#2]	-	3.86	***70.2***	-	5.14	-	**30.4**	1.8	<0.10[#2]	<0.10[#2]	3.06	11.8	<0.10[#2]	**8.56**	2.76	<0.24[#2]	<0.10[#2]	<0.10[#2]	-
MW300	OCA	12 Apr 2023	0207_MW300_230412	OMP Apr 2023	6.39	<0.10[#2]	-	4.78	***63.1***	-	6.58	-	**30.9**	1.9	<0.10[#2]	<0.10[#2]	2.90	12.0	<0.10[#2]	**7.72**	2.89	<0.24[#2]	<0.10[#2]	<0.10[#2]	-
MW300	OCA	24 Oct 2023	0207_MW300_231024	OMP Oct 2023	6.37	<0.02	-	3.90	***59.5***	-	6.34	-	**32.0**	2.1	<0.02	<0.04[#2]	2.53	11.0	<0.02	**7.52**	3.06	<0.06[#2]	<0.02	<0.02	-
MW300	OCA	02 Apr 2024	0207_MW300_240402	OMP Apr 2024	3.21	<0.02	-	2.48	***45.2***	-	3.16	-	**17.8**	1.3	<0.02	<0.02	1.83	7.24	<0.02	**5.11**	2.06	<0.05	<0.02	<0.02	-
MW300	OCA	10 Oct 2024	0207_MW300_241010	OMP Oct 2024	3.90	<0.09[#2]	-	2.82	***43.9***	-	4.43	-	**24.4**	1.2	<0.09[#2]	<0.09[#2]	1.69	7.84	<0.09[#2]	**4.40**	2.05	<0.22[#2]	<0.09[#2]	<0.09[#2]	<0.22[#2]
MW562	OCA	20 Apr 2022	0207_MW562_220420	OMP Apr 2022	3.30	<0.02	-	<0.14[#2]	***0.61***	-	2.37	-	**8.81**	0.9	<0.02	<0.02	0.43	4.49	<0.02	0.55	1.57	<0.06[#2]	<0.02	<0.02	-
MW562	OCA	03 Nov 2022	0207_MW562_221103	OMP Oct 2022	2.72	<0.02	-	0.19	***0.39***	-	2.66	-	**14.4**	0.7	<0.02	<0.02	0.68	4.69	<0.02	**0.74**	1.19	<0.06[#2]	<0.02	<0.02	-
MW562	OCA	12 Apr 2023	0207_MW562_230412	OMP Apr 2023	0.09	<0.02	-	<0.02	***0.03***	-	0.06	-	**0.17**	0.1	<0.02	<0.02	<0.02	0.13	<0.02	0.02	0.15	<0.05	<0.02	<0.02	-
MW562	OCA	26 Oct 2023	0207_MW562_231026	OMP Oct 2023	0.11	<0.02	-	<0.02	<0.04[#2]	-	0.06	-	**0.21**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.03	0.14	<0.05	<0.02	<0.02	-
MW562	OCA	04 Apr 2024	0207_MW562_240404	OMP Apr 2024	0.06	<0.02	-	<0.02	***0.04***	-	0.05	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.09	<0.05	<0.02	<0.02	-
MW562	OCA	10 Oct 2024	0207_MW562_241010	OMP Oct 2024	4.69	<0.09[#2]	-	<0.93[#2]	***1.20***	-	4.48	-	**22.0**	1.1	<0.09[#2]	<0.09[#2]	0.85	6.06	<0.09[#2]	**1.07**	1.71	<0.23[#2]	<0.09[#2]	<0.09[#2]	<0.23[#2]
MW563	OCA	20 Apr 2022	0207_MW563_220420	OMP Apr 2022	<0.02	<0.02	-	<0.02	<0.02[#2]	-	<0.02	-	<0.07[#2]	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.02[#2]	0.22	<0.06[#2]	<0.02	<0.02	-
MW563	OCA	03 Nov 2022	0207_MW563_221103	OMP Oct 2022	0.05	<0.02	-	<0.02	***0.01***	-	0.04	-	**0.10**	<0.1	<0.02	<0.02	<0.02	0.09	<0.02	0.01	0.18	<0.05	<0.02	<0.02	-
MW563	OCA	12 Apr 2023	0207_MW563_230412	OMP Apr 2023	2.90	<0.05[#2]	-	0.29	***0.50***	-	3.21	-	**16.2**	0.7	<0.05[#2]	<0.05[#2]	0.66	4.37	<0.05[#2]	**0.74**	1.10	<0.12[#2]	<0.05[#2]	<0.05[#2]	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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					0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems									*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water									**0.07**				**0.07**							**0.56**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW563	OCA	26 Oct 2023	0207_QC204_231026	OMP Oct 2023	1.6	<0.01	-	0.18	***0.64***	-	1.9	<0.01	**13**	0.7	<0.01	<0.01	0.58	2.4	<0.01	**0.68**	0.95	<0.02	<0.02	<0.01	<0.02
MW563	OCA	26 Oct 2023	0207_QC104_231026	OMP Oct 2023	2.70	<0.02	-	0.30	***0.99***	-	3.25	-	**19.6**	0.7	<0.02	<0.02	0.65	3.66	<0.02	**0.91**	1.20	<0.06[#2]	<0.02	<0.02	-
MW563	OCA	26 Oct 2023	0207_MW563_231026	OMP Oct 2023	2.75	<0.02	-	0.27	***1.06***	-	2.96	-	**18.3**	0.6	<0.02	<0.02	0.63	3.54	<0.02	**0.88**	1.09	<0.06[#2]	<0.02	<0.02	-
MW563	OCA	04 Apr 2024	0207_QC209_240404	OMP Apr 2024	1.9	<0.01	-	0.19	***0.48***	-	2.1	<0.01	**14**	0.64	<0.01	<0.01	0.57	2.3	<0.01	**0.6**	0.88	<0.02	<0.02	<0.01	<0.02
MW563	OCA	04 Apr 2024	0207_QC109_240404	OMP Apr 2024	2.16	<0.02	-	0.24	***0.62***	-	2.57	-	**16.4**	0.6	<0.02	<0.02	0.66	4.06	<0.02	**0.72**	1.00	<0.05	<0.02	<0.02	-
MW563	OCA	04 Apr 2024	0207_MW563_240404	OMP Apr 2024	2.26	<0.02	-	0.25	***0.71***	-	2.57	-	**15.9**	0.6	<0.02	<0.02	0.72	4.15	<0.02	**0.82**	1.02	<0.05	<0.02	<0.02	-
MW563	OCA	10 Oct 2024	0207_MW563_241010	OMP Oct 2024	0.13	<0.02	-	<0.04[#2]	*0.05*	-	0.08	-	**0.27**	<0.1	<0.02	<0.02	<0.02	0.19	<0.02	0.03	0.10	<0.05	<0.02	<0.02	<0.05
MW568	MRV*	08 Oct 2024	0207_MW568_241008	OMP Oct 2024	<0.03[#2]	<0.02	-	<0.02	<0.02[#2]	-	<0.02	-	<0.03[#2]	<0.1	<0.02	<0.02	<0.04[#2]	0.14	<0.02	<0.04[#2]	<0.04[#2]	<0.05	<0.02	<0.02	-
MW569	OCA	10 Oct 2024	0207_MW569_241010	OMP Oct 2024	0.46	<0.02	-	<0.04[#2]	***0.08***	-	0.17	-	**0.36**	<0.1	<0.02	<0.02	0.10	0.63	<0.02	0.16	0.15	<0.05	<0.02	<0.02	-
MW570	OCA	10 Oct 2024	0207_MW570_S_241010	OMP Oct 2024	0.06	<0.02	-	0.02	***0.25***	-	0.07	-	**0.45**	<0.2[#2]	<0.02	<0.02	<0.04[#2]	0.06	<0.02	<0.04[#2]	<0.04[#2]	<0.05	<0.02	<0.02	-
MW570	OCA	10 Oct 2024	0207_MW570_D_241010	OMP Oct 2024	0.05	<0.02	-	<0.04[#2]	***0.29***	-	0.04	-	**0.40**	<0.2[#2]	<0.02	<0.02	<0.04[#2]	0.09	<0.02	<0.04[#2]	<0.04[#2]	<0.05	<0.02	<0.02	-
MW570	OCA	10 Oct 2024	0207_QC106_241010	OMP Oct 2024	0.07	<0.02	-	<0.04[#2]	***0.35***	-	0.08	-	**0.43**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW570	OCA	10 Oct 2024	0207_QC206_241010	OMP Oct 2024	0.11	<0.01	<0.01	0.06[#1]	***0.44*** [#1]	0.04	0.11[#1]	-	**0.78**[#1]	<0.05	<0.01	<0.01	0.03[#1]	0.20	<0.01	0.04[#1]	0.04	<0.01	<0.01	<0.01	-
MW571	OCA	10 Oct 2024	0207_MW571_D_241010	OMP Oct 2024	0.20	<0.02	-	0.07	***1.23***	-	0.17	-	**1.05**	<0.1	<0.02	<0.02	0.06	0.30	<0.02	0.10	0.09	<0.05	<0.02	<0.02	-
MW571	OCA	10 Oct 2024	0207_MW571_S_241010	OMP Oct 2024	0.38	<0.02	-	0.20	***2.78***	-	0.38	-	**2.49**	<0.2[#2]	<0.02	<0.02	0.08	0.55	<0.02	0.14	0.08	<0.05	<0.02	<0.02	-
MW572	OCA	10 Oct 2024	0207_MW572_S_241010	OMP Oct 2024	0.78	<0.02	-	0.15	***2.46***	-	0.65	-	**3.30**	0.2	<0.02	<0.02	0.21	1.28	<0.02	0.28	0.31	<0.05	<0.02	<0.02	-
MW572	OCA	10 Oct 2024	0207_MW572_D_241010	OMP Oct 2024	0.74	<0.02	-	0.23	***2.65***	-	0.74	-	**2.92**	0.2	<0.02	<0.02	0.19	1.14	<0.02	0.27	0.28	<0.05	<0.02	<0.02	-
MW573	OCA	10 Oct 2024	0207_MW573_D_241010	OMP Oct 2024	0.71	<0.02	-	0.17	***2.60***	-	0.62	-	**3.14**	0.4	<0.02	<0.02	0.21	1.18	<0.02	0.28	0.29	<0.05	<0.02	<0.02	-
MW573	OCA	10 Oct 2024	0207_MW573_S_241010	OMP Oct 2024	0.80	<0.02	-	0.24	***2.83***	-	0.82	-	**3.53**	<0.2[#2]	<0.02	<0.02	0.22	1.21	<0.04[#2]	0.27	0.32	<0.05	<0.02	<0.02	-
MW574	OCA	08 Oct 2024	0207_MW574_D_241008	OMP Oct 2024	0.09	<0.02	-	<0.02	***0.16***	-	0.08	-	**0.43**	<0.2[#2]	<0.02	<0.02	<0.04[#2]	0.09	<0.02	<0.04[#2]	<0.04[#2]	<0.05	<0.02	<0.02	-
MW574	OCA	08 Oct 2024	0207_MW574_S_241008	OMP Oct 2024	0.10	<0.02	-	<0.04[#2]	***0.18***	-	0.08	-	**0.41**	<0.1	<0.02	<0.02	<0.02	0.14	<0.02	0.02	0.04	<0.05	<0.02	<0.02	-
MW575	OCA	10 Oct 2024	0207_MW575_241010	OMP Oct 2024	0.47	<0.02	-	0.18	***2.22***	-	0.42	-	**2.56**	<0.1	<0.02	<0.02	0.11	0.66	<0.02	0.16	0.17	<0.05	<0.02	<0.02	-
MW575	OCA	10 Oct 2024	0207_QC105_241010	OMP Oct 2024	0.46	<0.02	-	0.18	***2.25***	-	0.48	-	**2.72**	<0.2[#2]	<0.02	<0.02	0.11	0.65	<0.02	0.16	0.17	<0.05	<0.02	<0.02	-
MW575	OCA	10 Oct 2024	0207_QC205_241010	OMP Oct 2024	0.44	<0.01	<0.01	0.11[#1]	***2.4*** [#1]	0.18	0.42[#1]	-	**2.3**[#1]	0.12	<0.01	<0.01	0.10[#1]	0.79	<0.01	0.14[#1]	0.19	<0.01	<0.01	<0.01	-
MW576	OCA	10 Oct 2024	0207_MW576_241010	OMP Oct 2024	<0.04[#2]	<0.02	-	<0.04[#2]	***0.23***	-	<0.04[#2]	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW577	OCA	10 Oct 2024	0207_MW577_241010	OMP Oct 2024	<0.04[#2]	<0.02	-	<0.04[#2]	<0.04[#2]	-	<0.04[#2]	-	<0.04[#2]	<0.1	<0.02	<0.02	<0.04[#2]	<0.04[#2]	<0.02	<0.04[#2]	<0.04[#2]	<0.05	<0.02	<0.02	-
MW578	OCA	08 Oct 2024	0207_MW578_241008	OMP Oct 2024	0.05	<0.02	-	<0.04[#2]	***0.24***	-	0.05	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-

Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#2 Reported Analyte LOR is higher than Requested Analyte LOR
#3 The LORs have been raised due to matrix interference
Locations where new maximums were recorded for PFOA and PFHxS + PFOS
Locations where new minimums were recorded for PFOA and PFHxS + PFOS
*Assumed based on depth. Not defined in JBS&G Report.
OCA = Oakey Creek Alluvium, MRV = Main Range Volcanics, WCM = Walloon Coal Measures

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW003	OCA	18 Oct 2018	AACO-GW03-181017	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	24 Oct 2019	0207_MW003_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	26 Feb 2020	0207_QC1MW_200226	OMP Apr 2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.61	1.43	-	0.62	**1.11**	1.14	-	-
MW003	OCA	26 Feb 2020	0207_OMW03_200226	OMP Apr 2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.7	1.5	-	0.66	**1.16**	1.2	-	-
MW003	OCA	24 Mar 2020	0207_QC115_200324	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	24 Mar 2020	0207_MW003_200324	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	24 Mar 2020	0207_QC215_200324	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW003	OCA	21 Oct 2020	0207_MW003_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	13 Apr 2021	0207_MW003_210413	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	14 Oct 2021	0207_MW003_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	13 Apr 2022	0207_MW003_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	02 Nov 2022	0207_QC267_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	02 Nov 2022	0207_QC167_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	02 Nov 2022	0207_MW003_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	18 Apr 2023	0207_MW003_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	25 Oct 2023	0207_MW003_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	08 Apr 2024	0207_MW003_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	OCA	09 Oct 2024	0207_MW003_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW019	OCA	22 Nov 2018	AACO_GW19_181122	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	0.06	-	-	0.06	-	-	-
MW019	OCA	22 Nov 2018	AACO_QC200_181122	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW019	OCA	22 Nov 2018	AACO_QC100_181122	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	0.06	-	-	0.06	-	-	-
MW019	OCA	24 Oct 2019	0207_MW019_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW019	OCA	26 Mar 2020	0207_MW019_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW019	OCA	21 Oct 2020	0207_MW019_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW019	OCA	13 Apr 2021	0207_MW019_210413	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW019	OCA	14 Oct 2021	0207_MW019_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	0.07	-	-	-
MW019	OCA	12 Apr 2022	0207_MW019_220412	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW019	OCA	27 Oct 2022	0207_QC266_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW019	OCA	27 Oct 2022	0207_QC166_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW019	OCA	27 Oct 2022	0207_MW019_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	0.13	-	-	**0.13**	-	-	-
MW019	OCA	17 Apr 2023	0207_MW019_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	-	**0.12**	-	-	-
MW019	OCA	25 Oct 2023	0207_MW019_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW019	OCA	09 Apr 2024	0207_MW019_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	0.07	-	-	-
MW019	OCA	09 Oct 2024	0207_MW019_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-	0.07	-	0.07	-	-	-
MW021	OCA	18 Oct 2018	AACO-GW21-181018	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.53	4.24	-	-	**3.72**	-	-	-
MW021	OCA	18 Oct 2018	AACO-QC100-181018	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.69	4.43	-	-	**3.90**	-	-	-
MW021	OCA	18 Oct 2018	AACO_QC200_181018	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW021	OCA	27 Mar 2020	0207_MW021_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.51	7.02	-	-	**6.31**	-	-	-
MW021	OCA	19 Apr 2021	0207_MW021_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.29	6.79	-	-	**6.10**	-	-	-
MW021	OCA	12 Apr 2022	0207_MW021_220412	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.59	7.08	-	-	**6.33**	-	-	-
MW021	OCA	17 Apr 2023	0207_MW021_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.15	7.66	-	-	**6.85**	-	-	-
MW021	OCA	09 Apr 2024	0207_MW021_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.32	6.83	-	-	**6.16**	-	-	-
MW038	OCA	19 Oct 2018	AACO-GW38-181019	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.77	0.74	-	-	**0.63**	-	-	-
MW038	OCA	24 Oct 2019	0207_MW038_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.57	0.54	-	-	**0.45**	-	-	-
MW038	OCA	26 Mar 2020	0207_MW038_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.05	0.98	-	-	**0.85**	-	-	-
MW038	OCA	21 Oct 2020	0207_MW038_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.68	0.65	-	-	**0.56**	-	-	-
MW038	OCA	15 Apr 2021	0207_MW038_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	0.85	-	-	**0.72**	-	-	-
MW038	OCA	15 Oct 2021	0207_MW038_211015	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	1.11	-	-	**0.94**	-	-	-
MW038	OCA	03 Nov 2022	0207_MW038_221103	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.18	1.10	-	-	**0.93**	-	-	-
MW038	OCA	13 Apr 2023	0207_MW038_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.34	1.25	-	-	**1.07**	-	-	-
MW038	OCA	27 Oct 2023	0207_MW038_231027	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.53	1.45	-	-	**1.24**	-	-	-
MW038	OCA	08 Apr 2024	0207_MW038_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.95	0.91	-	-	**0.80**	-	-	-
MW038	OCA	01 Oct 2024	0207_QC101_241001	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.20	-	1.13	-	**0.98**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW038	OCA	01 Oct 2024	0207_MW038_241001	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	-	1.18	-	**1.03**	-	-	-
MW038	OCA	01 Oct 2024	0207_QC201_241001	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.27	-	1.19	-	**1.03**	-	-	-
MW056	OCA	17 Oct 2018	AACO-GW56-181017	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	0.43	-	-	**0.34**	-	-	-
MW056	OCA	23 Oct 2020	0207_MW056_201023	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	0.42	-	-	**0.31**	-	-	-
MW056	OCA	13 Apr 2021	0207_MW056_210413	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.66	0.62	-	-	**0.45**	-	-	-
MW056	OCA	14 Oct 2021	0207_MW056_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.62	0.59	-	-	**0.43**	-	-	-
MW056	OCA	12 Apr 2022	0207_MW056_220412	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.41	0.37	-	-	**0.27**	-	-	-
MW056	OCA	27 Oct 2022	0207_MW056_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.61	0.57	-	-	**0.42**	-	-	-
MW056	OCA	17 Apr 2023	0207_MW056_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.56	0.52	-	-	**0.40**	-	-	-
MW056	OCA	25 Oct 2023	0207_MW056_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.46	0.44	-	-	**0.35**	-	-	-
MW056	OCA	09 Apr 2024	0207_MW056_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.29	0.29	-	-	**0.23**	-	-	-
MW113	OCA	27 Mar 2020	0207_MW113_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.82	0.74	-	-	**0.60**	-	-	-
MW113	OCA	22 May 2020	0207_MW113_200522	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.74	0.68	-	-	**0.51**	-	-	-
MW113	OCA	15 Apr 2021	0207_MW113_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.57	0.52	-	-	**0.45**	-	-	-
MW113	OCA	12 Apr 2022	0207_MW113_220412	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.55	0.50	-	-	**0.41**	-	-	-
MW113	OCA	20 Apr 2023	0207_MW113_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.46	0.43	-	-	**0.36**	-	-	-
MW113	OCA	10 Apr 2024	0207_MW113_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.34	0.32	-	-	**0.27**	-	-	-
MW114	OCA	27 Mar 2020	0207_MW114_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW114	OCA	28 Apr 2021	0207_MW114_210428	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW114	OCA	20 Apr 2022	0207_MW114_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW114	OCA	20 Apr 2023	0207_QC113_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW114	OCA	20 Apr 2023	0207_MW114_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW114	OCA	20 Apr 2023	0207_QC213_230420	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW114	OCA	10 Apr 2024	0207_MW114_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW118	OCA	27 Mar 2020	0207_MW118_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW118	OCA	28 Apr 2021	0207_MW118_210428	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW118	OCA	20 Apr 2022	0207_MW118_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW118	OCA	20 Apr 2023	0207_QC114_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW118	OCA	20 Apr 2023	0207_MW118_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW118	OCA	20 Apr 2023	0207_QC214_230420	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW118	OCA	10 Apr 2024	0207_MW118_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW122	OCA	27 Mar 2020	0207_MW122_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.31	3.99	-	-	**3.30**	-	-	-
MW122	OCA	28 Apr 2021	0207_MW122_210428	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.96	2.72	-	-	**2.06**	-	-	-
MW122	OCA	20 Apr 2022	0207_MW122_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.81	2.58	-	-	**1.96**	-	-	-
MW122	OCA	20 Apr 2023	0207_MW122_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	0.05	<0.05	7.85	7.43	-	-	**6.17**	-	-	-
MW122	OCA	10 Apr 2024	0207_MW122_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.77	2.49	-	-	**1.78**	-	-	-
MW132	OCA	27 Mar 2020	0207_MW132_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-	0.04	-	-	-
MW132	OCA	19 Apr 2021	0207_MW132_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW132	OCA	12 Apr 2022	0207_MW132_220412	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	0.22	-	-	**0.20**	-	-	-
MW132	OCA	03 May 2024	0207_MW132_240503	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	16.5	15.1	-	-	**11.4**	-	-	-
MW134	OCA	18 Oct 2018	AACO-RN83362-181018	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW134	OCA	24 Oct 2019	0207_MW134_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	-	**0.12**	-	-	-
MW134	OCA	26 Mar 2020	0207_MW134_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW134	OCA	21 Oct 2020	0207_MW134_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW134	OCA	19 Apr 2021	0207_MW134_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-	0.04	-	-	-
MW134	OCA	14 Oct 2021	0207_MW134_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.34	0.32	-	-	**0.27**	-	-	-
MW134	OCA	14 Apr 2022	0207_MW134_220414	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.24	-	-	**0.22**	-	-	-
MW134	OCA	02 Nov 2022	0207_MW134_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW134	OCA	19 Apr 2023	0207_MW134_230419	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	0.11	-	-	**0.09**	-	-	-
MW134	OCA	25 Oct 2023	0207_MW134_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.26	-	-	**0.26**	-	-	-
MW134	OCA	10 Apr 2024	0207_MW134_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	-	0.05	-	-	-
MW134	OCA	09 Oct 2024	0207_MW134_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	-	0.20	-	**0.20**	-	-	-
MW139	OCA	10 Apr 2024	0207_MW139_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW147	OCA	12 Jul 2017	AACO-RN107547-170712	OMP July 2017	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	22 Nov 2018	AACO_RN107547_181122	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	24 Oct 2019	0207_MW147_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	27 Mar 2020	0207_MW147_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	21 Oct 2020	0207_MW147_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	13 Apr 2021	0207_MW147_210413	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	14 Oct 2021	0207_MW147_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	<0.01	-	-	-
MW147	OCA	12 Apr 2022	0207_MW147_220412	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	17 Apr 2023	0207_MW147_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	25 Oct 2023	0207_MW147_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	09 Apr 2024	0207_MW147_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	OCA	11 Oct 2024	0207_MW147_241011	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW149	OCA	30 Mar 2020	0207_MW149_200330	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW149	OCA	19 Apr 2021	0207_MW149_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW149	OCA	12 Apr 2022	0207_MW149_220412	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW149	OCA	20 Apr 2023	0207_MW149_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW149	OCA	09 Apr 2024	0207_MW149_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	18 Oct 2018	AACO-RN86696-181017	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	24 Oct 2019	0207_MW151_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	27 Mar 2020	0207_MW151_200327	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	21 Oct 2020	0207_MW151_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	13 Apr 2021	0207_MW151_210413	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	14 Oct 2021	0207_MW151_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	14 Apr 2022	0207_MW151_220414	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	OCA	17 Apr 2023	0207_MW151_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW151	OCA	25 Oct 2023	0207_MW151_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW151	OCA	09 Apr 2024	0207_MW151_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW151	OCA	11 Oct 2024	0207_MW151_241011	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-	0.05	-	0.05	-	-	-
MW157	OCA	26 Mar 2020	0207_MW157_200326	OMP Apr 2020	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	14.5	13.4	-	-	**11.3**	-	-	-
MW157	OCA	28 Apr 2021	0207_MW157_210428	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	14.1	13.2	-	-	**11.1**	-	-	-
MW157	OCA	20 Apr 2022	0207_MW157_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.6	12.5	-	-	**10.4**	-	-	-
MW157	OCA	20 Apr 2023	0207_MW157_230420	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	12.0	11.1	-	-	**8.93**	-	-	-
MW157	OCA	10 Apr 2024	0207_MW157_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.68	6.96	-	-	**5.50**	-	-	-
MW167	OCA	22 Oct 2018	AACO-MWA1-B-181022	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	19.3	18.0	-	-	**13.9**	-	-	-
MW167	OCA	10 Jul 2019	0207_MWA1-B_190710	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0165	<0.001	0.018	0.002	<0.001	17.4	16.2	-	-	**13.3**	-	-	-
MW167	OCA	21 Oct 2019	0207_MW167_191021	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	15.0	14.0	-	-	**10.5**	-	-	-
MW167	OCA	30 Oct 2019	0207_MWA1-B_191030	OMP Oct 2019	<0.001	0.0007	<0.001	<0.001	<0.0005	<0.001	0.0139	<0.001	0.019	0.002	<0.001	17.4	16.3	-	-	**12.7**	-	-	-
MW167	OCA	05 Mar 2020	0207_MWA1-B_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	0.0234	<0.002[#2]	0.017	<0.002[#2]	<0.002[#2]	17.0	15.6	-	-	**12.1**	-	-	-
MW167	OCA	25 Mar 2020	0207_MW167_200325	OMP Apr 2020	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	18.2	16.9	-	-	**13.5**	-	-	-
MW167	OCA	07 Apr 2020	0207_MWA1-B_200407	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	17.5	16.4	-	-	**13.0**	-	-	-
MW167	OCA	19 Oct 2020	0207_MW167_201019	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	17.3	16.2	-	-	**12.1**	-	-	-
MW167	OCA	23 Mar 2021	0207_MWA1-B_210323	OMP Apr 2021	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	20.6	19.5	-	-	**15.5**	-	-	-
MW167	OCA	17 Apr 2021	0207_MW167_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	12.0	11.2	-	-	**8.23**	-	-	-
MW167	OCA	11 Oct 2021	0207_MW167_211011	OMP Oct 2021	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	12.4	11.4	-	-	**8.04**	-	-	-
MW167	OCA	08 Feb 2022	0207_MW167_220208	OMR Feb 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	20.2	19.0	-	-	**15.1**	-	-	-
MW167	OCA	17 Apr 2022	0207_MW167_220417	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	10.1	9.44	-	-	**6.82**	-	-	-
MW167	OCA	27 Oct 2022	0207_MW167_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.0	10.4	-	-	**8.17**	-	-	-
MW167	OCA	12 Apr 2023	0207_QC203_230412	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW167	OCA	12 Apr 2023	0207_MW167_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.0	12.0	-	-	**8.62**	-	-	-
MW167	OCA	12 Apr 2023	0207_QC103_230412	OMP Apr 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	14.5	13.3	-	-	**9.65**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW167	OCA	24 Oct 2023	0207_MW167_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.7	10.8	-	-	**7.97**	-	-	-
MW167	OCA	02 Apr 2024	0207_MW167_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.75	8.94	-	-	**6.71**	-	-	-
MW167	OCA	09 Oct 2024	0207_MW167_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	11.0	-	10.2	-	**7.37**	-	-	-
MW172	OCA	24 Oct 2018	AACO-MWA2-D-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.90	2.10	<0.05	44.2	41.9	-	-	**30.5**	-	-	-
MW172	OCA	23 Oct 2019	0207_MW172_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	1.00	1.49	<0.05	16.7	15.9	-	-	**7.52**	-	-	-
MW172	OCA	30 Mar 2020	0207_MW172_200330	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	1.65	2.48	<0.05	22.0	20.8	-	-	**8.50**	-	-	-
MW172	OCA	20 Oct 2020	0207_MW172_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.86	1.42	<0.05	14.4	13.7	-	-	**6.01**	-	-	-
MW172	OCA	14 Apr 2021	0207_QC245_210414	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.82	0.94	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW172	OCA	14 Apr 2021	0207_QC145_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.86	0.86	<0.05	13.6	12.9	-	-	**4.56**	-	-	-
MW172	OCA	14 Apr 2021	0207_MW172_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.89	1.53	<0.05	14.3	13.7	-	-	**5.34**	-	-	-
MW172	OCA	13 Oct 2021	0207_MW172_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.42	0.24	<0.05	8.29	7.85	-	-	**3.70**	-	-	-
MW172	OCA	17 Apr 2022	0207_MW172_220417	OMP Apr 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	7.07	1.94	<0.05	49.2	47.6	-	-	**26.7**	-	-	-
MW172	OCA	26 Oct 2022	0207_QC265_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	4.68	2.71	<0.05	43.3	41.4	-	-	**22.1**	-	-	-
MW172	OCA	26 Oct 2022	0207_QC165_221026	OMP Oct 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	5.06	1.84	<0.05	42.9	41.4	-	-	**21.6**	-	-	-
MW172	OCA	26 Oct 2022	0207_MW172_221026	OMP Oct 2022	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.10[#2]	<0.10[#2]	6.22	3.04	<0.10[#2]	49.3	47.6	-	-	**24.1**	-	-	-
MW172	OCA	12 Apr 2023	0207_MW172_230412	OMP Apr 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	3.30	0.99	<0.05	36.2	34.6	-	-	**17.8**	-	-	-
MW172	OCA	24 Oct 2023	0207_MW172_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	2.40	0.84	<0.05	35.7	34.2	-	-	**18.6**	-	-	-
MW172	OCA	02 Apr 2024	0207_MW172_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	1.20	0.57	<0.05	19.3	18.4	-	-	**9.51**	-	-	-
MW172	OCA	10 Oct 2024	0207_MW172_241010	OMP Oct 2024	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	1.49	0.29	<0.05	21.0	-	20.1	-	**8.63**	-	-	-
MW173	OCA	25 Oct 2018	AACO-MWA2-E-181025	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	1.00	0.08	<0.05	11.9	11.3	-	-	**5.87**	-	-	-
MW173	OCA	23 Oct 2019	0207_MW173_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	1.40	0.12	<0.05	15.1	14.2	-	-	**7.03**	-	-	-
MW173	OCA	26 Mar 2020	0207_QC221_200326	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	1.1	0.036	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW173	OCA	26 Mar 2020	0207_MW173_200326	OMP Apr 2020	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.05	1.01	<0.05	<0.05	12.2	11.4	-	-	**5.92**	-	-	-
MW173	OCA	26 Mar 2020	0207_QC121_200326	OMP Apr 2020	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.05	1.07	<0.05	<0.05	12.7	12.0	-	-	**6.17**	-	-	-
MW173	OCA	20 Oct 2020	0207_QC232_201020	OMP Oct 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.34	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW173	OCA	20 Oct 2020	0207_QC132_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.42	<0.05	<0.05	8.49	7.89	-	-	**4.75**	-	-	-
MW173	OCA	20 Oct 2020	0207_MW173_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.54	<0.05	<0.05	10.0	9.46	-	-	**4.94**	-	-	-
MW173	OCA	14 Apr 2021	0207_MW173_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	<0.05	<0.05	8.43	7.93	-	-	**4.33**	-	-	-
MW173	OCA	13 Oct 2021	0207_MW173_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.76	<0.05	<0.05	10.5	9.84	-	-	**5.00**	-	-	-
MW173	OCA	17 Apr 2022	0207_MW173_220417	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.66	<0.05	<0.05	10.0	9.48	-	-	**5.27**	-	-	-
MW173	OCA	24 Oct 2022	0207_MW173_221024	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.43	<0.05	<0.05	10.1	9.47	-	-	**4.76**	-	-	-
MW173	OCA	12 Apr 2023	0207_MW173_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	<0.05	<0.05	10.4	9.69	-	-	**4.80**	-	-	-
MW173	OCA	24 Oct 2023	0207_MW173_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	<0.05	<0.05	9.95	9.33	-	-	**4.51**	-	-	-
MW173	OCA	24 Oct 2023	0207_QC100_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.31	<0.05	<0.05	10.4	9.69	-	-	**4.88**	-	-	-
MW173	OCA	24 Oct 2023	0207_QC200_231024	OMP Oct 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.036	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW173	OCA	02 Apr 2024	0207_MW173_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.17	<0.05	<0.05	8.45	7.88	-	-	**4.12**	-	-	-
MW173	OCA	10 Oct 2024	0207_QC204_241010	OMP Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.65	0.02	<0.01	13.03	-	12.19	3.26	**5.9**	6.46	-	-
MW173	OCA	10 Oct 2024	0207_QC104_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.74	<0.05	<0.05	12.6	-	11.7	-	**5.60**	-	-	-
MW173	OCA	10 Oct 2024	0207_MW173_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.71	<0.05	<0.05	17.2	-	16.1	-	**8.04**	-	-	-
MW174	OCA	20 Oct 2018	AACO-QC101-181020	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW174	OCA	20 Oct 2018	AACO-MWA4-A-181020	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW174	OCA	20 Oct 2018	AACO_QC201_181020	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW174	OCA	10 Jul 2019	0207_MWA4-A_190710	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.002	<0.001	<0.001	0.523	0.492	-	-	**0.171**	-	-	-
MW174	OCA	22 Oct 2019	0207_QC100_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW174	OCA	22 Oct 2019	0207_QC200_191022	OMP Oct 2019	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.015	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW174	OCA	22 Oct 2019	0207_MW174_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-	0.01	-	-	-
MW174	OCA	29 Oct 2019	0207_MWA4-A_191029	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.410	<0.001	<0.001	1.03	0.993	-	-	**0.145**	-	-	-
MW174	OCA	04 Mar 2020	0207_MWA4-A_200304	OMP Apr 2020	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	0.595	0.573	-	-	**0.0996**	-	-	-
MW174	OCA	26 Mar 2020	0207_MW174_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.52	<0.05	<0.05	0.76	0.76	-	-	**0.16**	-	-	-
MW174	OCA	22 May 2020	0207_MW174_200522	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.29	<0.05	<0.05	0.73	0.73	-	-	**0.33**	-	-	-
MW174	OCA	19 Oct 2020	0207_MW174_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.94	<0.05	<0.05	1.45	1.43	-	-	**0.18**	-	-	-
MW174	OCA	14 Apr 2021	0207_MW174_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.72	<0.05	<0.05	1.05	1.05	-	-	**0.11**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW174	OCA	13 Oct 2021	0207_MW174_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	<0.05	<0.05	0.98	0.98	-	-	**0.16**	-	-	-
MW174	OCA	17 Apr 2022	0207_MW174_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	0.06	-	-	-
MW174	OCA	02 Nov 2022	0207_MW174_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	0.22	-	-	0.06	-	-	-
MW174	OCA	13 Apr 2023	0207_MW174_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	0.13	-	-	0.06	-	-	-
MW174	OCA	24 Oct 2023	0207_MW174_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	0.04	-	-	-
MW174	OCA	03 Apr 2024	0207_QC201_240403	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW174	OCA	03 Apr 2024	0207_QC101_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW174	OCA	03 Apr 2024	0207_MW174_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW174	OCA	09 Oct 2024	0207_MW174_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	<0.05	<0.05	0.15	-	0.15	-	0.06	-	-	-
MW178	OCA	19 Oct 2018	AACO-MWA4-B-UA-1810	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	11 Jul 2019	0207_MWA4-B-UA_19071	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	0.0121	0.0113	-	-	0.0107	-	-	-
MW178	OCA	23 Oct 2019	0207_MW178_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	29 Oct 2019	0207_MWA4-B-UA_19102	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.010	<0.001	<0.001	0.0208	0.0194	-	-	0.0094	-	-	-
MW178	OCA	04 Mar 2020	0207_MWA4-BUA_20030	OMP Apr 2020	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.001	<0.001	<0.001	0.0168	0.0156	-	-	0.0099	-	-	-
MW178	OCA	26 Mar 2020	0207_MW178_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.13	<0.05	<0.05	0.15	0.15	-	-	0.02	-	-	-
MW178	OCA	08 Apr 2020	0207_MWA4-B-UA_20040	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-	0.01	-	-	-
MW178	OCA	19 Oct 2020	0207_QC131_201019	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	19 Oct 2020	0207_MW178_201019	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	19 Oct 2020	0207_QC231_201019	OMP Oct 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW178	OCA	24 Mar 2021	0207_QC102_210324	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	24 Mar 2021	0207_MWA4-B-UA_21032	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	24 Mar 2021	0207_QC202_210324	OMP Apr 2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	<0.05	-	<0.02	<0.02	<0.02	-	-
MW178	OCA	17 Apr 2021	0207_MW178_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	11 Oct 2021	0207_MW178_211011	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	08 Feb 2022	0207_QC202_220208	OMR Feb 2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	0.06	-	0.06	0.06	0.06	-	-
MW178	OCA	08 Feb 2022	0207_QC102_220208	OMR Feb 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW178	OCA	08 Feb 2022	0207_MW178_220208	OMR Feb 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW178	OCA	17 Apr 2022	0207_MW178_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	02 Nov 2022	0207_MW178_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	13 Apr 2023	0207_MW178_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	24 Oct 2023	0207_MW178_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	03 Apr 2024	0207_MW178_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	OCA	09 Oct 2024	0207_QC203_241009	OMP Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.1	-	<0.05	<0.01	0.01	0.01	-	-
MW178	OCA	09 Oct 2024	0207_QC103_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW178	OCA	09 Oct 2024	0207_MW178_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW179	OCA	20 Oct 2018	AACO-MWA5-A-LA-18102	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.82	6.28	-	-	**3.98**	-	-	-
MW179	OCA	20 Oct 2018	AACO-QC102-181020	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.92	6.39	-	-	**4.01**	-	-	-
MW179	OCA	20 Oct 2018	AACO_QC202_181020	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.025	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW179	OCA	06 Nov 2019	0207_MW179_191106	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	6.71	6.13	-	-	**3.86**	-	-	-
MW179	OCA	23 Mar 2020	0207_QC214_200323	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW179	OCA	23 Mar 2020	0207_QC114_200323	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.87	6.34	-	-	**3.99**	-	-	-
MW179	OCA	23 Mar 2020	0207_MW179_200323	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.03	8.34	-	-	**5.28**	-	-	-
MW179	OCA	20 Oct 2020	0207_MW179_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.03	8.37	-	-	**5.31**	-	-	-
MW179	OCA	16 Apr 2021	0207_QC250_210416	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW179	OCA	16 Apr 2021	0207_MW179_210416	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.56	8.79	-	-	**5.65**	-	-	-
MW179	OCA	16 Apr 2021	0207_QC150_210416	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.89	9.12	-	-	**5.88**	-	-	-
MW179	OCA	11 Oct 2021	0207_MW179_211011	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.0	10.1	-	-	**6.65**	-	-	-
MW179	OCA	18 Apr 2022	0207_MW179_220418	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	8.40	7.74	-	-	**4.72**	-	-	-
MW179	OCA	03 Nov 2022	0207_MW179_221103	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	<0.05	<0.05	12.1	11.3	-	-	**6.95**	-	-	-
MW179	OCA	13 Apr 2023	0207_MW179_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.05	<0.05	9.90	9.08	-	-	**5.25**	-	-	-
MW179	OCA	24 Oct 2023	0207_MW179_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	10.1	9.35	-	-	**6.25**	-	-	-
MW179	OCA	03 Apr 2024	0207_MW179_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.51	6.88	-	-	**4.51**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW179	OCA	09 Oct 2024	0207_MW179_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.10	-	8.43	-	**5.58**	-	-	-
MW187	OCA	25 Oct 2018	AACO-QC106-181025	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.76	1.61	-	-	**1.36**	-	-	-
MW187	OCA	25 Oct 2018	AACO-MWB5-A-181025	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.02	1.85	-	-	**1.55**	-	-	-
MW187	OCA	25 Oct 2018	AACO_QC206_181025	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW187	OCA	11 Jul 2019	0207_MWB5-A_190710	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.001	<0.001	<0.001	1.10	0.980	-	-	**0.749**	-	-	-
MW187	OCA	11 Jul 2019	0207_QC1MW_190711_0	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.001	<0.001	<0.001	1.22	1.10	-	-	**0.838**	-	-	-
MW187	OCA	22 Oct 2019	0207_MW187_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.35	1.24	-	-	**1.02**	-	-	-
MW187	OCA	29 Oct 2019	0207_MWB5-A_191029	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.002	<0.001	<0.001	1.43	1.29	-	-	**0.942**	-	-	-
MW187	OCA	04 Mar 2020	0207_QC1MW_200304	OMP Apr 2020	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	1.10	0.994	-	-	**0.772**	-	-	-
MW187	OCA	04 Mar 2020	0207_MWA4-B5-A_20030	OMP Apr 2020	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	1.43	1.28	-	-	**1.03**	-	-	-
MW187	OCA	25 Mar 2020	0207_QC216_200325	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW187	OCA	25 Mar 2020	0207_MW187_200325	OMP Apr 2020	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	1.31	1.22	-	-	**1.11**	-	-	-
MW187	OCA	20 Oct 2020	0207_MW187_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.27	1.16	-	-	**0.94**	-	-	-
MW187	OCA	17 Apr 2021	0207_MW187_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	1.14	-	-	**0.89**	-	-	-
MW187	OCA	13 Oct 2021	0207_MW187_211013	OMP Oct 2021	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	1.23	1.16	-	-	**1.04**	-	-	-
MW187	OCA	11 Apr 2022	0207_MW187_220411	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.13	1.11	-	-	**0.61**	-	-	-
MW187	OCA	27 Oct 2022	0207_MW187_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.03	0.97	-	-	**0.73**	-	-	-
MW187	OCA	13 Apr 2023	0207_MW187_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.15	1.06	-	-	**0.87**	-	-	-
MW187	OCA	26 Oct 2023	0207_MW187_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	0.79	-	-	**0.68**	-	-	-
MW187	OCA	03 Apr 2024	0207_MW187_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.64	0.60	-	-	**0.51**	-	-	-
MW189	OCA	20 Oct 2018	AACO-MWB5-B-181020	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	0.07	-	-	-
MW189	OCA	11 Jul 2019	0207_MWB5-B_190711	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	0.181	0.165	-	-	**0.135**	-	-	-
MW189	OCA	22 Oct 2019	0207_MW189_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	0.15	-	-	**0.15**	-	-	-
MW189	OCA	29 Oct 2019	0207_MWB5-B_191029	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	0.257	0.238	-	-	**0.195**	-	-	-
MW189	OCA	04 Mar 2020	0207_MWB5-B_200304	OMP Apr 2020	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	0.220	0.201	-	-	**0.165**	-	-	-
MW189	OCA	25 Mar 2020	0207_MW189_200325	OMP Apr 2020	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.05	<0.05	<0.05	<0.05	0.16	0.16	-	-	**0.16**	-	-	-
MW189	OCA	20 Oct 2020	0207_MW189_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	-	**0.20**	-	-	-
MW189	OCA	17 Apr 2021	0207_MW189_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	-	**0.20**	-	-	-
MW189	OCA	13 Oct 2021	0207_MW189_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	0.19	-	-	**0.19**	-	-	-
MW189	OCA	11 Apr 2022	0207_MW189_220411	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	0.15	-	-	**0.15**	-	-	-
MW189	OCA	27 Oct 2022	0207_MW189_221027	OMP Oct 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	0.15	-	-	**0.13**	-	-	-
MW189	OCA	13 Apr 2023	0207_QC206_230413	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW189	OCA	13 Apr 2023	0207_QC106_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.25	0.23	-	-	**0.21**	-	-	-
MW189	OCA	13 Apr 2023	0207_MW189_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.24	-	-	**0.22**	-	-	-
MW189	OCA	26 Oct 2023	0207_MW189_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.18	-	-	**0.18**	-	-	-
MW189	OCA	03 Apr 2024	0207_MW189_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	0.11	-	-	**0.11**	-	-	-
MW189	OCA	09 Oct 2024	0207_MW189_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	<0.05	<0.05	0.37	-	0.35	-	**0.19**	-	-	-
MW193	OCA	20 Oct 2018	AACO-MWC1-C-181026	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.1	<0.05	<0.05	56	52.3	-	-	**33.6**	-	-	-
MW193	OCA	11 Jul 2019	0207_MWC1-C_190711	OMP July 2019	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.0200[#2]	<0.020[#2]	0.050	<0.020[#2]	<0.020[#2]	46.9	43.0	-	-	**26.4**	-	-	-
MW193	OCA	11 Jul 2019	0207_MWC1-H_190711	OMP July 2019	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.0200[#2]	<0.020[#2]	0.220	<0.020[#2]	<0.020[#2]	43.9	41.9	-	-	**34.3**	-	-	-
MW193	OCA	23 Oct 2019	0207_MW193_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	<0.05	<0.05	75.6	70.1	-	-	**43.1**	-	-	-
MW193	OCA	30 Oct 2019	0207_MWC1-C_191030	OMP Oct 2019	<0.025[#2]	<0.0100[#2]	<0.025[#2]	<0.025[#2]	<0.0100[#2]	<0.025[#2]	<0.0100[#2]	<0.010[#2]	0.183	0.036	<0.010[#2]	72.9	65.8	-	-	**39.8**	-	-	-
MW193	OCA	30 Oct 2019	0207_MWC1-H_191030	OMP Oct 2019	<0.025[#2]	<0.0100[#2]	<0.025[#2]	<0.025[#2]	<0.0100[#2]	<0.025[#2]	0.0260	<0.010[#2]	0.256	0.014	<0.010[#2]	57.5	54.4	-	-	**42.9**	-	-	-
MW193	OCA	05 Mar 2020	0207_MWC1-C_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.0016[#2]	<0.002[#2]	0.084	0.012	<0.002[#2]	46.0	41.9	-	-	**25.4**	-	-	-
MW193	OCA	25 Mar 2020	0207_MW193_200325	OMP Apr 2020	<0.40[#2]	<0.16[#2]	<0.40[#2]	<0.40[#2]	<0.16[#2]	<0.40[#2]	<0.16[#2]	<0.16[#2]	0.18	<0.16[#2]	<0.16[#2]	75.0	69.1	-	-	**44.5**	-	-	-
MW193	OCA	08 Apr 2020	0207_MWC1-C_200408	OMP Apr 2020	<1.25[#2]	<0.50[#2]	<1.25[#2]	<1.25[#2]	<0.50[#2]	<1.25[#2]	<0.50[#2]	<0.50[#2]	<0.50[#2]	<0.50[#2]	<0.50[#2]	60.4	55.8	-	-	**32.0**	-	-	-
MW193	OCA	20 Oct 2020	0207_QC234_201020	OMP Oct 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.13	0.037	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW193	OCA	20 Oct 2020	0207_MW193_201020	OMP Oct 2020	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.07[#2]	<0.07[#2]	0.13	<0.07[#2]	<0.07[#2]	64.4	59.3	-	-	**34.4**	-	-	-
MW193	OCA	20 Oct 2020	0207_QC134_201020	OMP Oct 2020	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	0.14	<0.05	<0.05	68.0	62.5	-	-	**38.8**	-	-	-
MW193	OCA	24 Mar 2021	0207_MWC1-C_210224	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.15	0.05	<0.05	65.6	59.8	-	-	**34.3**	-	-	-
MW193	OCA	14 Apr 2021	0207_MW193_210414	OMP Apr 2021	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	0.14	<0.05	<0.05	76.0	69.9	-	-	**42.9**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums							PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW193	OCA	11 Oct 2021	0207_MW193_211011	OMP Oct 2021	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.14	<0.05	<0.05	81.5	74.7	-	-	**45.4**	-	-	-
MW193	OCA	09 Feb 2022	0207_MW193_220209	OMR Feb 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.11	<0.05	<0.05	73.8	67.3	-	-	**39.3**	-	-	-
MW193	OCA	17 Apr 2022	0207_MW193_220417	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.07	<0.05	<0.05	59.5	55.3	-	-	**31.5**	-	-	-
MW193	OCA	26 Oct 2022	0207_MW193_221026	OMP Oct 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	45.6	42.6	-	-	**24.3**	-	-	-
MW193	OCA	12 Apr 2023	0207_MW193_230412	OMP Apr 2023	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	45.4	41.7	-	-	**24.1**	-	-	-
MW193	OCA	24 Oct 2023	0207_MW193_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.81	<0.05	<0.05	35.4	32.8	-	-	**19.6**	-	-	-
MW193	OCA	02 Apr 2024	0207_MW193_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	41.8	38.4	-	-	**22.3**	-	-	-
MW193	OCA	10 Oct 2024	0207_MW193_241010	OMP Oct 2024	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.06	<0.05	<0.05	52.4	-	48.7	-	**25.5**	-	-	-
MW198	OCA	21 Oct 2018	AACO-MWC1-H-181021	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.24	<0.05	<0.05	53.7	51.2	-	-	**41.7**	-	-	-
MW198	OCA	22 Oct 2019	0207_MW198_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	0.22	<0.05	<0.05	53.1	50.5	-	-	**40.2**	-	-	-
MW198	OCA	05 Mar 2020	0207_MWC1-H_200305	OMP Apr 2020	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0010	<0.001	0.002	<0.001	<0.001	0.806	0.779	-	-	**0.706**	-	-	-
MW198	OCA	25 Mar 2020	0207_MW198_200325	OMP Apr 2020	<0.40[#2]	<0.16[#2]	<0.40[#2]	<0.40[#2]	<0.16[#2]	<0.40[#2]	<0.16[#2]	<0.16[#2]	0.19	<0.16[#2]	<0.16[#2]	48.1	45.6	-	-	**37.5**	-	-	-
MW198	OCA	19 Oct 2020	0207_MW198_201019	OMP Oct 2020	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.04[#2]	<0.05	0.10	<0.05	<0.05	25.0	23.8	-	-	**18.5**	-	-	-
MW198	OCA	14 Apr 2021	0207_MW198_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.25	7.89	-	-	**6.68**	-	-	-
MW198	OCA	11 Oct 2021	0207_MW198_211011	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.1	10.5	-	-	**8.73**	-	-	-
MW198	OCA	17 Apr 2022	0207_MW198_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.66	9.21	-	-	**7.55**	-	-	-
MW198	OCA	25 Oct 2022	0207_QC263_221025	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.05	<0.05	28.8	27.5	-	-	**22.4**	-	-	-
MW198	OCA	04 Nov 2022	0207_QC163_221025	OMP Oct 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.10	<0.05	<0.05	31.6	30.0	-	-	**23.6**	-	-	-
MW198	OCA	04 Nov 2022	0207_MW198_221025	OMP Oct 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.09	<0.05	<0.05	33.2	31.6	-	-	**25.1**	-	-	-
MW198	OCA	12 Apr 2023	0207_MW198_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.30	5.99	-	-	**5.30**	-	-	-
MW198	OCA	24 Oct 2023	0207_MW198_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.67	7.40	-	-	**6.89**	-	-	-
MW198	OCA	02 Apr 2024	0207_MW198_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.8	13.1	-	-	**11.2**	-	-	-
MW198	OCA	10 Oct 2024	0207_MW198_241010	OMP Oct 2024	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.07	<0.05	<0.05	24.3	-	23.0	-	**18.2**	-	-	-
MW201	OCA	10 Jul 2019	0207_MW201_190710	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0081	<0.001	0.217	0.002	<0.001	54.2	48.2	-	-	**35.2**	-	-	-
MW201	OCA	22 Oct 2019	0207_QC203_191022	OMP Oct 2019	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.69	0.011	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW201	OCA	22 Oct 2019	0207_MW201_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	0.78	<0.05	<0.05	498	430	-	-	**325**	-	-	-
MW201	OCA	22 Oct 2019	0207_QC103_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	0.80	<0.05	<0.05	451	409	-	-	**306**	-	-	-
MW201	OCA	30 Oct 2019	0207_MW201_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0101	<0.001	0.196	0.001	<0.001	58.9	54.0	-	-	**39.1**	-	-	-
MW201	OCA	05 Mar 2020	0207_MW201_200305	OMP Apr 2020	<0.040[#2]	<0.0160[#2]	<0.040[#2]	<0.040[#2]	<0.0160[#2]	<0.040[#2]	<0.0160[#2]	<0.016[#2]	0.400	<0.016[#2]	<0.016[#2]	105	94.0	-	-	**73.3**	-	-	-
MW201	OCA	26 Mar 2020	0207_MW201_200326	OMP Apr 2020	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.07[#2]	<0.07[#2]	0.48	<0.07[#2]	<0.07[#2]	118	107	-	-	**81.7**	-	-	-
MW201	OCA	23 Oct 2020	0207_MW201_201023	OMP Oct 2020	<0.47[#2]	<0.19[#2]	<0.47[#2]	<0.47[#2]	<0.19[#2]	<0.47[#2]	<0.19[#2]	<0.19[#2]	0.41	<0.19[#2]	<0.19[#2]	157	142	-	-	**105**	-	-	-
MW201	OCA	15 Apr 2021	0207_MW201_210415	OMP Apr 2021	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	0.43	<0.05	<0.05	162	143	-	-	**101**	-	-	-
MW201	OCA	12 Oct 2021	0207_MW201_211012	OMP Oct 2021	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.10[#2]	<0.10[#2]	0.44	<0.10[#2]	<0.10[#2]	183	163	-	-	**117**	-	-	-
MW201	OCA	17 Apr 2022	0207_QC207_220417	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.5	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW201	OCA	17 Apr 2022	0207_QC107_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.61	<0.05	<0.05	202	184	-	-	**136**	-	-	-
MW201	OCA	17 Apr 2022	0207_MW201_220417	OMP Apr 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.46	<0.05	<0.05	249	225	-	-	**162**	-	-	-
MW201	OCA	04 Nov 2022	0207_MW201_221025	OMP Oct 2022	<0.60[#2]	<0.24[#2]	<0.60[#2]	<0.60[#2]	<0.24[#2]	<0.60[#2]	<0.24[#2]	<0.24[#2]	0.55	<0.24[#2]	<0.24[#2]	348	310	-	-	**210**	-	-	-
MW201	OCA	12 Apr 2023	0207_MW201_230412	OMP Apr 2023	<0.58[#2]	<0.23[#2]	<0.58[#2]	<0.58[#2]	<0.23[#2]	<0.58[#2]	<0.23[#2]	<0.23[#2]	0.42	<0.23[#2]	<0.23[#2]	350	308	-	-	**186**	-	-	-
MW201	OCA	25 Oct 2023	0207_QC201_231025	OMP Oct 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.56	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW201	OCA	25 Oct 2023	0207_MW201_231025	OMP Oct 2023	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.09[#2]	<0.09[#2]	0.74	<0.09[#2]	<0.09[#2]	228	201	-	-	**139**	-	-	-
MW201	OCA	25 Oct 2023	0207_QC101_231025	OMP Oct 2023	<0.22[#2]	<0.09[#2]	<0.22[#2]	<0.22[#2]	<0.09[#2]	<0.22[#2]	<0.09[#2]	<0.09[#2]	0.86	<0.09[#2]	<0.09[#2]	226	201	-	-	**134**	-	-	-
MW201	OCA	02 Apr 2024	0207_MW201_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.48	<0.05	<0.05	127	108	-	-	**72.0**	-	-	-
MW201	OCA	09 Oct 2024	0207_MW201_241009	OMP Oct 2024	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.10[#2]	<0.10[#2]	0.51	<0.10[#2]	<0.10[#2]	149	-	132	-	**88.9**	-	-	-
MW202	OCA	23 Oct 2018	AACO-MW202-181023	OMP Oct 2018	<1.25[#2]	<0.50[#2]	<1.25[#2]	<1.25[#2]	<0.50[#2]	<1.25[#2]	<0.50[#2]	<0.50[#2]	1.35	<0.50[#2]	<0.50[#2]	499	452	-	-	**363**	-	-	-
MW202	OCA	10 Jul 2019	0207_MW202_190710	OMP July 2019	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.0200[#2]	<0.020[#2]	1.03	<0.020[#2]	<0.020[#2]	628	575	-	-	**458**	-	-	-
MW202	OCA	22 Oct 2019	0207_MW202_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.20	<0.05	<0.05	63.2	56.9	-	-	**41.6**	-	-	-
MW202	OCA	30 Oct 2019	0207_MW202_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0214	0.004	0.682	0.013	<0.001	435	397	-	-	**292**	-	-	-
MW202	OCA	05 Mar 2020	0207_MW202_200305	OMP Apr 2020	<0.400[#2]	<0.160[#2]	<0.400[#2]	<0.400[#2]	<0.160[#2]	<0.400[#2]	<0.160[#2]	<0.160[#2]	3.06	<0.160[#2]	<0.160[#2]	1,910	1,760	-	-	**1,570**	-	-	-
MW202	OCA	30 Mar 2020	0207_MW202_200330	OMP Apr 2020	<0.80[#2]	<0.32[#2]	<0.80[#2]	<0.80[#2]	<0.32[#2]	<0.80[#2]	<0.32[#2]	<0.32[#2]	2.82	<0.32[#2]	<0.32[#2]	1,130	1,090	-	-	**1,030**	-	-	-
MW202	OCA	08 Apr 2020	0207_MW202_200408	OMP Apr 2020	<0.82[#2]	<0.33[#2]	<0.82[#2]	<0.82[#2]	<0.33[#2]	<0.82[#2]	<0.33[#2]	<0.33[#2]	1.83	<0.33[#2]	<0.33[#2]	945	913	-	-	**860**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW202	OCA	23 Oct 2020	0207_MW202_201023	OMP Oct 2020	<1.00[#2]	<0.40[#2]	<1.00[#2]	<1.00[#2]	<0.40[#2]	<1.00[#2]	<0.40[#2]	<0.40[#2]	0.84	<0.40[#2]	<0.40[#2]	419	401	-	-	**362**	-	-	-
MW202	OCA	17 Apr 2021	0207_MW202_210417	OMP Apr 2021	<0.92[#2]	<0.37[#2]	<0.92[#2]	<0.92[#2]	<0.37[#2]	<0.92[#2]	0.55	<0.37[#2]	0.95	<0.37[#2]	<0.37[#2]	449	431	-	-	**386**	-	-	-
MW202	OCA	12 Oct 2021	0207_MW202_211012	OMP Oct 2021	<0.60[#2]	<0.24[#2]	<0.60[#2]	<0.60[#2]	<0.24[#2]	<0.60[#2]	<0.24[#2]	<0.24[#2]	1.60	<0.24[#2]	<0.24[#2]	416	390	-	-	**316**	-	-	-
MW202	OCA	17 Apr 2022	0207_MW202_220417	OMP Apr 2022	<6.25[#2]	<2.50[#2]	<6.25[#2]	<6.25[#2]	<2.50[#2]	<6.25[#2]	<2.50[#2]	<2.50[#2]	<2.50[#2]	<2.50[#2]	<2.50[#2]	638	619	-	-	**575**	-	-	-
MW202	OCA	24 Oct 2022	0207_MW202_221024	OMP Oct 2022	<0.58[#2]	<0.23[#2]	<0.58[#2]	<0.58[#2]	<0.23[#2]	<0.58[#2]	0.65	<0.23[#2]	0.46	<0.23[#2]	<0.23[#2]	266	254	-	-	**222**	-	-	-
MW202	OCA	12 Apr 2023	0207_MW202_230412	OMP Apr 2023	<0.60[#2]	<0.24[#2]	<0.60[#2]	<0.60[#2]	<0.24[#2]	<0.60[#2]	0.50	<0.24[#2]	<0.24[#2]	<0.24[#2]	<0.24[#2]	219	205	-	-	**171**	-	-	-
MW202	OCA	25 Oct 2023	0207_MW202_231025	OMP Oct 2023	<0.26[#2]	<0.10[#2]	<0.26[#2]	<0.26[#2]	<0.10[#2]	<0.26[#2]	<0.28[#2]	<0.10[#2]	<0.70[#2]	<0.10[#2]	<0.10[#2]	216	204	-	-	**171**	-	-	-
MW202	OCA	02 Apr 2024	0207_MW202_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.34	<0.05	1.28	<0.05	<0.05	447	422	-	-	**370**	-	-	-
MW202	OCA	09 Oct 2024	0207_MW202_241009	OMP Oct 2024	<1.05[#2]	<0.42[#2]	<1.05[#2]	<1.05[#2]	<0.42[#2]	<1.05[#2]	<4.20[#2]	<0.42[#2]	0.46	<0.42[#2]	<0.42[#2]	227	-	220	-	**203**	-	-	-
MW203	OCA	10 Jul 2019	0207_MW203_190710	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0012	<0.001	0.067	0.002	<0.001	27.3	24.6	-	-	**17.9**	-	-	-
MW203	OCA	23 Oct 2019	0207_MW203_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.43	1.34	-	-	**1.07**	-	-	-
MW203	OCA	30 Oct 2019	0207_MW203_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0018	<0.001	0.064	<0.001	<0.001	26.0	23.5	-	-	**15.9**	-	-	-
MW203	OCA	05 Mar 2020	0207_MW203_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.0016[#2]	<0.002[#2]	0.063	0.002	<0.002[#2]	28.3	25.5	-	-	**17.9**	-	-	-
MW203	OCA	25 Mar 2020	0207_QC219_200325	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.061	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW203	OCA	25 Mar 2020	0207_MW203_200325	OMP Apr 2020	<0.16[#2]	<0.06[#2]	<0.16[#2]	<0.16[#2]	<0.06[#2]	<0.16[#2]	<0.06[#2]	<0.06[#2]	<0.06[#2]	<0.06[#2]	<0.06[#2]	30.6	27.9	-	-	**19.7**	-	-	-
MW203	OCA	22 Oct 2020	0207_QC236_201022	OMP Oct 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.047	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW203	OCA	22 Oct 2020	0207_MW203_201022	OMP Oct 2020	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	25.5	23.0	-	-	**15.9**	-	-	-
MW203	OCA	22 Oct 2020	0207_QC136_201022	OMP Oct 2020	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	27.1	24.5	-	-	**17.3**	-	-	-
MW203	OCA	15 Apr 2021	0207_MW203_210415	OMP Apr 2021	<0.45[#2]	<0.18[#2]	<0.45[#2]	<0.45[#2]	<0.18[#2]	<0.45[#2]	<0.18[#2]	<0.18[#2]	<0.18[#2]	<0.18[#2]	<0.18[#2]	31.5	28.4	-	-	**19.8**	-	-	-
MW203	OCA	12 Oct 2021	0207_MW203_211012	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	28.2	25.4	-	-	**17.5**	-	-	-
MW203	OCA	17 Apr 2022	0207_MW203_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.4	10.5	-	-	**7.28**	-	-	-
MW203	OCA	24 Oct 2022	0207_MW203_221024	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	10.3	9.30	-	-	**6.56**	-	-	-
MW203	OCA	12 Apr 2023	0207_MW203_230412	OMP Apr 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	16.2	14.8	-	-	**10.8**	-	-	-
MW203	OCA	24 Oct 2023	0207_MW203_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.6	12.2	-	-	**8.56**	-	-	-
MW203	OCA	02 Apr 2024	0207_MW203_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.46	7.44	-	-	**5.10**	-	-	-
MW203	OCA	09 Oct 2024	0207_MW203_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.26	-	8.31	-	**5.08**	-	-	-
MW204	OCA	23 Oct 2018	AACO_QC204_181023	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	0.012	1.3	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW204	OCA	23 Oct 2018	AACO-MW204-181023	OMP Oct 2018	<1.25[#2]	<0.50[#2]	<1.25[#2]	<1.25[#2]	<0.50[#2]	<1.25[#2]	<0.50[#2]	<0.50[#2]	1.65	<0.50[#2]	<0.50[#2]	1,080	926	-	-	**655**	-	-	-
MW204	OCA	23 Oct 2018	AACO-QC104-181023	OMP Oct 2018	<2.50[#2]	<1.00[#2]	<2.50[#2]	<2.50[#2]	<1.00[#2]	<2.50[#2]	<1.00[#2]	<1.00[#2]	2.50	<1.00[#2]	<1.00[#2]	1,290	1,130	-	-	**805**	-	-	-
MW204	OCA	10 Jul 2019	0207_MW204_190710	OMP July 2019	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.0200[#2]	<0.020[#2]	0.630	<0.020[#2]	<0.020[#2]	412	367	-	-	**243**	-	-	-
MW204	OCA	22 Oct 2019	0207_MW204_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.33	<0.05	<0.05	362	322	-	-	**184**	-	-	-
MW204	OCA	22 Oct 2019	0207_QC101_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.34	<0.05	<0.05	396	352	-	-	**204**	-	-	-
MW204	OCA	22 Oct 2019	0207_QC201_191022	OMP Oct 2019	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.32	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW204	OCA	30 Oct 2019	0207_MW204_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0144	0.007	0.299	<0.001	<0.001	289	259	-	-	**154**	-	-	-
MW204	OCA	05 Mar 2020	0207_MW204_200305	OMP Apr 2020	<0.040[#2]	<0.0160[#2]	<0.040[#2]	<0.040[#2]	<0.0160[#2]	<0.040[#2]	<0.0160[#2]	<0.016[#2]	0.256	<0.016[#2]	<0.016[#2]	180	157	-	-	**118**	-	-	-
MW204	OCA	25 Mar 2020	0207_MW204_200325	OMP Apr 2020	<0.79[#2]	<0.32[#2]	<0.79[#2]	<0.79[#2]	<0.32[#2]	<0.79[#2]	<0.32[#2]	<0.32[#2]	<0.32[#2]	<0.32[#2]	<0.32[#2]	254	226	-	-	**151**	-	-	-
MW204	OCA	22 Oct 2020	0207_MW204_201022	OMP Oct 2020	<0.50[#2]	<0.20[#2]	<0.50[#2]	<0.50[#2]	<0.20[#2]	<0.50[#2]	<0.20[#2]	<0.20[#2]	0.22	<0.20[#2]	<0.20[#2]	199	178	-	-	**126**	-	-	-
MW204	OCA	17 Apr 2021	0207_MW204_210417	OMP Apr 2021	<0.95[#2]	<0.38[#2]	<0.95[#2]	<0.95[#2]	<0.38[#2]	<0.95[#2]	<0.38[#2]	<0.38[#2]	<0.38[#2]	<0.38[#2]	<0.38[#2]	178	159	-	-	**107**	-	-	-
MW204	OCA	12 Oct 2021	0207_MW204_211012	OMP Oct 2021	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.10[#2]	<0.10[#2]	0.44	<0.10[#2]	<0.10[#2]	253	222	-	-	**157**	-	-	-
MW204	OCA	20 Apr 2022	0207_MW204_220420	OMP Apr 2022	<1.25[#2]	<0.50[#2]	<1.25[#2]	<1.25[#2]	<0.50[#2]	<1.25[#2]	<0.50[#2]	<0.50[#2]	<0.50[#2]	<0.50[#2]	<0.50[#2]	307	276	-	-	**200**	-	-	-
MW204	OCA	24 Oct 2022	0207_MW204_221024	OMP Oct 2022	<1.08[#2]	<0.43[#2]	<1.08[#2]	<1.08[#2]	<0.43[#2]	<1.08[#2]	<0.43[#2]	<0.43[#2]	0.56	<0.43[#2]	<0.43[#2]	489	439	-	-	**307**	-	-	-
MW204	OCA	12 Apr 2023	0207_MW204_230412	OMP Apr 2023	<2.25[#2]	<0.90[#2]	<2.25[#2]	<2.25[#2]	<0.90[#2]	<2.25[#2]	<0.90[#2]	<0.90[#2]	1.44	<0.90[#2]	<0.90[#2]	1,070	945	-	-	**667**	-	-	-
MW204	OCA	12 Apr 2023	0207_QC104_230412	OMP Apr 2023	<2.08[#2]	<0.83[#2]	<2.08[#2]	<2.08[#2]	<0.83[#2]	<2.08[#2]	<0.83[#2]	<0.83[#2]	2.08	<0.83[#2]	<0.83[#2]	1,100	966	-	-	**704**	-	-	-
MW204	OCA	12 Apr 2023	0207_QC204_230412	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	0.012	1.7	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW204	OCA	24 Oct 2023	0207_MW204_231024	OMP Oct 2023	<1.25[#2]	<0.50[#2]	<1.25[#2]	<1.25[#2]	<0.50[#2]	<1.25[#2]	<0.50[#2]	<0.50[#2]	<3.75[#2]	<0.50[#2]	<0.50[#2]	2,110	1,910	-	-	**1,500**	-	-	-
MW204	OCA	02 Apr 2024	0207_MW204_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	1.40	<0.05	<0.05	1,300	1,150	-	-	**898**	-	-	-
MW204	OCA	09 Oct 2024	0207_QC202_241009	OMP Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.59	<0.01	<0.01	1,715.87	-	1,494.59	346	**1,090**	1,136	-	-
MW204	OCA	09 Oct 2024	0207_QC102_241009	OMP Oct 2024	<12.5[#2]	<5.00[#2]	<12.5[#2]	<12.5[#2]	<5.00[#2]	<12.5[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	1,540	-	1,380	-	**1,020**	-	-	-
MW204	OCA	09 Oct 2024	0207_MW204_241009	OMP Oct 2024	<12.5[#2]	<5.00[#2]	<12.5[#2]	<12.5[#2]	<5.00[#2]	<12.5[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	1,580	-	1,440	-	**1,050**	-	-	-
MW205	OCA	23 Oct 2018	AACO-MW205-181023	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	22.0	20.1	-	-	**14.5**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW205	OCA	10 Jul 2019	0207_MW205_190710	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0006	<0.001	0.010	0.002	<0.001	21.4	19.1	-	-	**13.7**	-	-	-
MW205	OCA	22 Oct 2019	0207_QC202_191022	OMP Oct 2019	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW205	OCA	22 Oct 2019	0207_MW205_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.7	22.2	-	-	**15.3**	-	-	-
MW205	OCA	22 Oct 2019	0207_QC102_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.3	21.8	-	-	**15.3**	-	-	-
MW205	OCA	30 Oct 2019	0207_MW205_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0009	<0.001	0.010	<0.001	<0.001	23.2	20.8	-	-	**13.4**	-	-	-
MW205	OCA	05 Mar 2020	0207_MW205_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.0016[#2]	<0.002[#2]	0.007	0.002	<0.002[#2]	25.8	23.0	-	-	**16.3**	-	-	-
MW205	OCA	26 Mar 2020	0207_MW205_200326	OMP Apr 2020	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.05	0.09	<0.05	<0.05	27.6	24.7	-	-	**17.4**	-	-	-
MW205	OCA	22 Oct 2020	0207_MW205_201022	OMP Oct 2020	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	21.8	19.8	-	-	**14.5**	-	-	-
MW205	OCA	17 Apr 2021	0207_MW205_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.8	19.8	-	-	**14.2**	-	-	-
MW205	OCA	12 Oct 2021	0207_MW205_211012	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	20.8	19.0	-	-	**13.8**	-	-	-
MW205	OCA	14 Apr 2022	0207_MW205_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	18.6	17.1	-	-	**12.8**	-	-	-
MW205	OCA	24 Oct 2022	0207_MW205_221024	OMP Oct 2022	<0.59[#2]	<0.24[#2]	<0.59[#2]	<0.59[#2]	<0.24[#2]	<0.59[#2]	<0.24[#2]	<0.24[#2]	<0.24[#2]	<0.24[#2]	<0.24[#2]	90.7	80.5	-	-	**43.1**	-	-	-
MW205	OCA	12 Apr 2023	0207_MW205_230412	OMP Apr 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	41.6	37.6	-	-	**26.0**	-	-	-
MW205	OCA	24 Oct 2023	0207_MW205_231024	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.5	26.9	-	-	**20.6**	-	-	-
MW205	OCA	02 Apr 2024	0207_QC200_240402	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW205	OCA	02 Apr 2024	0207_QC100_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	18.8	16.7	-	-	**11.6**	-	-	-
MW205	OCA	02 Apr 2024	0207_MW205_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	19.5	17.2	-	-	**12.3**	-	-	-
MW205	OCA	09 Oct 2024	0207_MW205_241009	OMP Oct 2024	<0.13[#2]	<0.05[#2]	<0.13[#2]	<0.13[#2]	<0.05[#2]	<0.13[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	23.4	-	21.2	-	**13.7**	-	-	-
MW207	OCA	06 Nov 2019	0207_MW207_191106	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	0.28	-	-	**0.24**	-	-	-
MW207	OCA	17 Apr 2022	0207_MW207_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.27	0.27	-	-	**0.24**	-	-	-
MW207	OCA	25 Oct 2022	0207_MW207_221025	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.00	1.82	-	-	**1.35**	-	-	-
MW207	OCA	12 Apr 2023	0207_MW207_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.17	2.84	-	-	**2.15**	-	-	-
MW207	OCA	25 Oct 2023	0207_MW207_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.07	2.83	-	-	**2.26**	-	-	-
MW207	OCA	02 Apr 2024	0207_MW207_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.21	2.00	-	-	**1.59**	-	-	-
MW207	OCA	10 Oct 2024	0207_MW207_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.72	-	2.55	-	**2.05**	-	-	-
MW221	OCA	20 Oct 2018	AACO-MWC2-I-181020	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.81	6.32	-	-	**3.95**	-	-	-
MW221	OCA	11 Jul 2019	0207_MWC2-I_190711	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.009	<0.001	<0.001	5.02	4.63	-	-	**3.08**	-	-	-
MW221	OCA	23 Oct 2019	0207_MW221_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.26	5.77	-	-	**3.72**	-	-	-
MW221	OCA	30 Oct 2019	0207_MWC2-I_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.008	<0.001	<0.001	5.87	5.45	-	-	**3.46**	-	-	-
MW221	OCA	05 Mar 2020	0207_MWC2-I_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.0016[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	<0.002[#2]	6.54	5.96	-	-	**4.17**	-	-	-
MW221	OCA	25 Mar 2020	0207_MW221_200325	OMP Apr 2020	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.05	<0.05	<0.05	<0.05	7.35	6.75	-	-	**4.55**	-	-	-
MW221	OCA	19 Oct 2020	0207_MW221_201019	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.10	7.51	-	-	**4.89**	-	-	-
MW221	OCA	14 Apr 2021	0207_MW221_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.22	5.76	-	-	**3.40**	-	-	-
MW221	OCA	12 Oct 2021	0207_QC257_21012	OMP Oct 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW221	OCA	12 Oct 2021	0207_QC157_211012	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.22	6.54	-	-	**3.94**	-	-	-
MW221	OCA	12 Oct 2021	0207_MW221_211012	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.09	6.49	-	-	**3.87**	-	-	-
MW221	OCA	17 Apr 2022	0207_MW221_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.62	6.17	-	-	**4.04**	-	-	-
MW221	OCA	25 Oct 2022	0207_MW221_221025	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.50	6.87	-	-	**4.31**	-	-	-
MW221	OCA	12 Apr 2023	0207_MW221_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.70	6.14	-	-	**3.94**	-	-	-
MW221	OCA	25 Oct 2023	0207_MW221_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.22	6.69	-	-	**4.30**	-	-	-
MW221	OCA	02 Apr 2024	0207_MW221_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.23	4.81	-	-	**3.20**	-	-	-
MW221	OCA	09 Oct 2024	0207_MW221_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.44	-	5.93	-	**3.99**	-	-	-
MW222	OCA	20 Oct 2018	AACO-MWC2-K-181020	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	2.25	0.83	<0.05	66.4	62.3	-	-	**36.5**	-	-	-
MW222	OCA	11 Jul 2019	0207_MWC2-K_190711	OMP July 2019	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.0200[#2]	<0.020[#2]	1.72	0.266	<0.020[#2]	47.6	44.2	-	-	**25.0**	-	-	-
MW222	OCA	11 Jul 2019	0207_QC1MW_190711	OMP July 2019	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.0200[#2]	<0.020[#2]	2.09	0.290	<0.020[#2]	49.9	46.4	-	-	**25.9**	-	-	-
MW222	OCA	23 Oct 2019	0207_MW222_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	1.88	0.22	<0.05	58.0	54.1	-	-	**28.4**	-	-	-
MW222	OCA	30 Oct 2019	0207_MWC2-K_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0186	0.002	1.61	0.173	<0.001	43.6	40.3	-	-	**18.5**	-	-	-
MW222	OCA	05 Mar 2020	0207_MWC2-K_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	0.0370	0.002	1.92	0.318	<0.002[#2]	54.3	49.7	-	-	**26.6**	-	-	-
MW222	OCA	25 Mar 2020	0207_MW222_200325	OMP Apr 2020	<0.16[#2]	<0.06[#2]	<0.16[#2]	<0.16[#2]	<0.06[#2]	<0.16[#2]	<0.06[#2]	<0.06[#2]	2.72	0.26	<0.06[#2]	61.5	57.1	-	-	**31.4**	-	-	-
MW222	OCA	19 Oct 2020	0207_MW222_201019	OMP Oct 2020	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.10[#2]	<0.10[#2]	6.40	0.10	<0.10[#2]	62.5	58.6	-	-	**26.7**	-	-	-
MW222	OCA	14 Apr 2021	0207_MW222_210414	OMP Apr 2021	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.10[#2]	<0.10[#2]	3.14	0.13	<0.10[#2]	77.4	72.2	-	-	**38.0**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW222	OCA	12 Oct 2021	0207_QC258_21012	OMP Oct 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.013	<0.01	2.6	0.058	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW222	OCA	12 Oct 2021	0207_MW222_211012	OMP Oct 2021	<0.12#2	<0.05#2	<0.12#2	<0.12#2	<0.05#2	<0.12#2	<0.05#2	<0.05	3.67	0.06	<0.05	64.3	60.1	-	-	**27.9**	-	-	-
MW222	OCA	12 Oct 2021	0207_QC158_211012	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	3.57	0.10	<0.05	68.2	63.5	-	-	**30.4**	-	-	-
MW222	OCA	17 Apr 2022	0207_QC206_220417	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.013	<0.01	1.8	0.27	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW222	OCA	17 Apr 2022	0207_MW222_220417	OMP Apr 2022	<0.12#2	<0.05#2	<0.12#2	<0.12#2	<0.05#2	<0.12#2	<0.05#2	<0.05	1.35	0.14	<0.05	37.7	35.7	-	-	**21.2**	-	-	-
MW222	OCA	17 Apr 2022	0207_QC106_220417	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	1.68	0.21	<0.05	40.4	37.8	-	-	**23.2**	-	-	-
MW222	OCA	26 Oct 2022	0207_MW222_221026	OMP Oct 2022	<0.06#2	<0.02	<0.06#2	<0.06#2	<0.02	<0.06#2	<0.02	<0.05	0.66	0.20	<0.05	27.1	25.6	-	-	**17.4**	-	-	-
MW222	OCA	12 Apr 2023	0207_MW222_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	0.57	0.22	<0.05	27.6	26.0	-	-	**19.0**	-	-	-
MW222	OCA	25 Oct 2023	0207_MW222_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.59	0.17	<0.05	31.5	29.9	-	-	**21.6**	-	-	-
MW222	OCA	03 Apr 2024	0207_MW222_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	0.47	0.10	<0.05	26.4	24.9	-	-	**18.1**	-	-	-
MW223	OCA	22 Oct 2018	AACO-MWC2-L-181022	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	6.10	0.38	<0.05	73.0	70.0	-	-	**13.9**	-	-	-
MW223	OCA	11 Jul 2019	0207_MWC2-L_190711	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0225	0.002	4.06	0.378	<0.001	57.2	54.4	-	-	**12.7**	-	-	-
MW223	OCA	23 Oct 2019	0207_MWC2-L_191031	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0272	0.005	3.92	0.296	<0.001	65.6	62.4	-	-	**14.5**	-	-	-
MW223	OCA	05 Mar 2020	0207_QC1MW_200305_2	OMP Apr 2020	<0.004#2	<0.0016#2	<0.004#2	<0.004#2	<0.0016#2	<0.004#2	0.0312	0.002	4.25	0.450	<0.002#2	62.8	59.7	-	-	**13.9**	-	-	-
MW223	OCA	05 Mar 2020	0207_MWC2-L_200305	OMP Apr 2020	<0.004#2	<0.0016#2	<0.004#2	<0.004#2	<0.0016#2	<0.004#2	0.0326	0.002	3.73	0.418	<0.002#2	76.8	73.0	-	-	**18.5**	-	-	-
MW223	OCA	25 Mar 2020	0207_MW223_200325	OMP Apr 2020	<0.16#2	<0.06#2	<0.16#2	<0.16#2	<0.06#2	<0.16#2	<0.06#2	<0.06#2	5.56	0.47	<0.06#2	87.2	82.8	-	-	**23.2**	-	-	-
MW223	OCA	19 Oct 2020	0207_MW223_201019	OMP Oct 2020	<0.10#2	<0.04#2	<0.10#2	<0.10#2	<0.04#2	<0.10#2	0.05	<0.05	5.00	0.61	<0.05	98.4	94.2	-	-	**23.7**	-	-	-
MW223	OCA	14 Apr 2021	0207_MW223_210414	OMP Apr 2021	<0.18#2	<0.07#2	<0.18#2	<0.18#2	<0.07#2	<0.18#2	<0.07#2	<0.07#2	6.65	0.74	<0.07#2	119	115	-	-	**27.5**	-	-	-
MW223	OCA	12 Oct 2021	0207_MW223_211012	OMP Oct 2021	<0.06#2	<0.02	<0.06#2	<0.06#2	<0.02	<0.06#2	0.04	<0.05	8.98	0.58	<0.05	131	126	-	-	**23.5**	-	-	-
MW223	OCA	13 Apr 2022	0207_MW223_220413	OMP Apr 2022	<0.12#2	<0.05#2	<0.12#2	<0.12#2	<0.05#2	<0.12#2	<0.05#2	<0.05	6.56	0.22	<0.05	111	106	-	-	**21.2**	-	-	-
MW223	OCA	13 Apr 2022	0207_QC200_220413	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.024	<0.01	5.7	0.41	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW223	OCA	13 Apr 2022	0207_QC100_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	6.47	0.40	<0.05	104	99.3	-	-	**25.3**	-	-	-
MW223	OCA	26 Oct 2022	0207_MW223_221026	OMP Oct 2022	<0.12#2	<0.05#2	<0.12#2	<0.12#2	<0.05#2	<0.12#2	<0.05#2	<0.05	5.92	0.46	<0.05	89.6	85.9	-	-	**20.6**	-	-	-
MW223	OCA	12 Apr 2023	0207_MW223_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	3.81	0.68	<0.05	74.0	70.7	-	-	**17.0**	-	-	-
MW223	OCA	25 Oct 2023	0207_MW223_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<2.60#2	0.58	<0.05	83.1	82.1	-	-	**13.8**	-	-	-
MW223	OCA	25 Oct 2023	0207_QC102_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	3.05	0.62	<0.05	90.2	88.7	-	-	**15.1**	-	-	-
MW223	OCA	25 Oct 2023	0207_QC202_231025	OMP Oct 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.015	<0.01	2.1	0.48	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW223	OCA	03 Apr 2024	0207_MW223_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	3.57	0.30	<0.05	84.0	81.8	-	-	**17.4**	-	-	-
MW229	OCA	22 Oct 2018	AACO-MWC3-I-181022	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	32.8	30.8	-	-	**26.0**	-	-	-
MW229	OCA	11 Jul 2019	0207_MWC3-I_190711	OMP July 2019	<0.050#2	<0.0200#2	<0.050#2	<0.050#2	<0.0200#2	<0.050#2	<0.0200#2	<0.020#2	<0.020#2	<0.020#2	<0.020#2	24.0	23.3	-	-	**21.6**	-	-	-
MW229	OCA	22 Oct 2019	0207_MW229_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	34.8	33.6	-	-	**30.7**	-	-	-
MW229	OCA	22 Oct 2019	0207_QC104_191022	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	37.0	35.8	-	-	**32.8**	-	-	-
MW229	OCA	22 Oct 2019	0207_QC204_191022	OMP Oct 2019	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW229	OCA	30 Oct 2019	0207_MWC3-I_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0067	<0.001	0.007	<0.001	<0.001	31.8	30.8	-	-	**28.0**	-	-	-
MW229	OCA	05 Mar 2020	0207_MWC3-I_200305	OMP Apr 2020	<0.004#2	<0.0016#2	<0.004#2	<0.004#2	<0.0016#2	<0.004#2	0.0114	<0.002#2	<0.002#2	<0.002#2	<0.002#2	25.8	24.8	-	-	**22.6**	-	-	-
MW229	OCA	25 Mar 2020	0207_MW229_200325	OMP Apr 2020	<0.40#2	<0.16#2	<0.40#2	<0.40#2	<0.16#2	<0.40#2	<0.16#2	<0.16#2	<0.16#2	<0.16#2	<0.16#2	38.7	37.4	-	-	**34.8**	-	-	-
MW229	OCA	20 Oct 2020	0207_MW229_201020	OMP Oct 2020	<0.18#2	<0.07#2	<0.18#2	<0.18#2	<0.07#2	<0.18#2	<0.07#2	<0.07#2	<0.07#2	<0.07#2	<0.07#2	30.7	29.4	-	-	**26.3**	-	-	-
MW229	OCA	20 Apr 2021	0207_MW229_210414	OMP Apr 2021	<0.13#2	<0.05#2	<0.13#2	<0.13#2	<0.05#2	<0.13#2	<0.05#2	<0.05	0.07	<0.05	<0.05	45.1	43.5	-	-	**39.8**	-	-	-
MW229	OCA	12 Oct 2021	0207_QC259_21012	OMP Oct 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW229	OCA	12 Oct 2021	0207_MW229_211012	OMP Oct 2021	<0.12#2	<0.05#2	<0.12#2	<0.12#2	<0.05#2	<0.12#2	<0.05#2	<0.05	<0.05	<0.05	<0.05	35.1	33.5	-	-	**29.8**	-	-	-
MW229	OCA	12 Oct 2021	0207_QC159_211012	OMP Oct 2021	<0.11#2	<0.04#2	<0.11#2	<0.11#2	<0.04#2	<0.11#2	<0.04#2	<0.05	<0.05	<0.05	<0.05	46.6	44.8	-	-	**40.8**	-	-	-
MW229	OCA	13 Apr 2022	0207_MW229_220413	OMP Apr 2022	<0.12#2	<0.05#2	<0.12#2	<0.12#2	<0.05#2	<0.12#2	<0.05#2	<0.05	<0.05	<0.05	<0.05	30.1	29.1	-	-	**26.2**	-	-	-
MW229	OCA	27 Oct 2022	0207_MW229_221027	OMP Oct 2022	<0.12#2	<0.05#2	<0.12#2	<0.12#2	<0.05#2	<0.12#2	<0.05#2	<0.05	<0.05	<0.05	<0.05	44.2	42.4	-	-	**38.2**	-	-	-
MW229	OCA	13 Apr 2023	0207_MW229_230413	OMP Apr 2023	<0.10#2	<0.04#2	<0.10#2	<0.10#2	<0.04#2	<0.10#2	<0.04#2	<0.05	<0.05	<0.05	<0.05	52.8	50.7	-	-	**46.0**	-	-	-
MW229	OCA	25 Oct 2023	0207_MW229_231025	OMP Oct 2023	<0.06#2	<0.02	<0.06#2	<0.06#2	<0.02	<0.06#2	<0.02	<0.05	<0.05	<0.05	<0.05	63.3	61.4	-	-	**56.6**	-	-	-
MW229	OCA	03 Apr 2024	0207_QC202_240403	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW229	OCA	03 Apr 2024	0207_QC102_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	38.8	37.3	-	-	**34.1**	-	-	-
MW229	OCA	03 Apr 2024	0207_MW229_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	44.4	42.8	-	-	**39.7**	-	-	-
MW229	OCA	09 Oct 2024	0207_MW229_241009	OMP Oct 2024	<0.22#2	<0.09#2	<0.22#2	<0.22#2	<0.09#2	<0.22#2	<0.09#2	<0.09#2	<0.09#2	<0.09#2	<0.09#2	64.6	-	64.6	-	**60.8**	-	-	-
MW230	OCA	20 Oct 2018	AACO-MWD2-A-181020	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	2.41	0.5	<0.05	56.7	54.2	-	-	**13**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW230	OCA	25 Oct 2018	0207_MWD2-A_181025	OMP Oct 2018	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.034	0.006	<0.001	2.05	1.94	-	-	**1.24**	-	-	-
MW230	OCA	11 Jul 2019	0207_MWD2-A_190711	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0115	0.003	1.64	0.110	<0.001	42.5	40.7	-	-	**10.4**	-	-	-
MW230	OCA	23 Oct 2019	0207_MW230_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	2.05	0.08	<0.05	53.6	51.6	-	-	**10.0**	-	-	-
MW230	OCA	30 Oct 2019	0207_MWD2-A_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0068	0.004	1.92	0.117	<0.001	49.7	47.4	-	-	**12.0**	-	-	-
MW230	OCA	31 Oct 2019	0207_QC1mw_191031	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0151	0.003	1.34	0.082	<0.001	34.3	32.6	-	-	**8.29**	-	-	-
MW230	OCA	11 Mar 2020	0207_MW230_200310	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	0.0134	0.003	1.94	0.088	<0.002[#2]	47.0	45.2	-	-	**9.01**	-	-	-
MW230	OCA	25 Mar 2020	0207_MW230_200325	OMP Apr 2020	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.05	2.61	0.11	<0.05	57.8	55.2	-	-	**14.4**	-	-	-
MW230	OCA	19 Oct 2020	0207_MW230_201019	OMP Oct 2020	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	2.36	<0.05	<0.05	72.7	70.2	-	-	**15.3**	-	-	-
MW230	OCA	14 Apr 2021	0207_MW230_210414	OMP Apr 2021	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.04[#2]	<0.05	2.93	<0.05	<0.05	79.8	76.8	-	-	**17.3**	-	-	-
MW230	OCA	14 Apr 2021	0207_QC246_210414	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.011	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW230	OCA	14 Apr 2021	0207_QC146_210414	OMP Apr 2021	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.04[#2]	<0.05	2.76	<0.05	<0.05	76.0	73.5	-	-	**13.8**	-	-	-
MW230	OCA	12 Oct 2021	0207_MW230_211012	OMP Oct 2021	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	4.35	0.18	<0.05	82.3	78.8	-	-	**17.0**	-	-	-
MW230	OCA	17 Apr 2022	0207_MW230_220417	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	2.55	0.20	<0.05	53.9	51.4	-	-	**10.3**	-	-	-
MW230	OCA	26 Oct 2022	0207_MW230_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.05	<0.05	6.51	5.93	-	-	**3.27**	-	-	-
MW230	OCA	12 Apr 2023	0207_MW230_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.29	3.92	-	-	**1.72**	-	-	-
MW230	OCA	25 Oct 2023	0207_MW230_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.64	0.06	<0.05	23.3	22.4	-	-	**5.33**	-	-	-
MW230	OCA	03 Apr 2024	0207_QC203_240403	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.56	0.031	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW230	OCA	03 Apr 2024	0207_QC103_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.68	0.06	<0.05	23.7	22.8	-	-	**4.84**	-	-	-
MW230	OCA	03 Apr 2024	0207_MW230_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.72	<0.05	<0.05	23.8	23.0	-	-	**5.34**	-	-	-
MW230	OCA	09 Oct 2024	0207_MW230_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.04[#2]	<0.05	1.17	0.14	<0.05	33.9	-	32.2	-	**7.27**	-	-	-
MW232	OCA	24 Oct 2018	AACO_QC205_181024	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.019	<0.01	0.15	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW232	OCA	24 Oct 2018	AACO-QC105-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	1.48	<0.05	20.0	18.9	-	-	**13.5**	-	-	-
MW232	OCA	24 Oct 2018	AACO-MWD2-E-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	0.16	1.78	<0.05	21.5	20.2	-	-	**13.9**	-	-	-
MW232	OCA	23 Oct 2019	0207_MW232_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	0.20	6.54	<0.05	42.3	40.2	-	-	**24.5**	-	-	-
MW232	OCA	01 Apr 2020	0207_MW232_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.20	1.70	<0.05	24.9	23.4	-	-	**14.9**	-	-	-
MW232	OCA	20 Oct 2020	0207_MW232_201020	OMP Oct 2020	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.09[#2]	0.04	<0.05	0.18	1.78	<0.05	27.7	26.2	-	-	**17.1**	-	-	-
MW232	OCA	14 Apr 2021	0207_MW232_210414	OMP Apr 2021	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	0.24	2.55	<0.05	36.9	35.2	-	-	**24.7**	-	-	-
MW232	OCA	13 Oct 2021	0207_MW232_211013	OMP Oct 2021	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.09	1.38	<0.05	13.1	12.5	-	-	**5.73**	-	-	-
MW232	OCA	17 Apr 2022	0207_MW232_220417	OMP Apr 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.13	1.36	<0.05	33.0	31.3	-	-	**20.8**	-	-	-
MW232	OCA	27 Oct 2022	0207_MW232_221027	OMP Oct 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.13	1.21	<0.05	29.8	28.3	-	-	**16.2**	-	-	-
MW232	OCA	12 Apr 2023	0207_MW232_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	0.17	1.70	<0.05	37.1	34.0	-	-	**22.3**	-	-	-
MW232	OCA	25 Oct 2023	0207_MW232_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.06[#2]	<0.05	0.18	0.67	<0.05	40.8	37.8	-	-	**10.3**	-	-	-
MW232	OCA	03 Apr 2024	0207_MW232_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	<0.05	1.06	<0.05	12.6	11.8	-	-	**8.21**	-	-	-
MW233	OCA	23 Oct 2018	AACO-MWE-J-181023	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.17	5.68	-	-	**2.93**	-	-	-
MW233	OCA	24 Oct 2019	0207_MW233_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.47	2.32	-	-	**1.74**	-	-	-
MW233	OCA	26 Mar 2020	0207_MW233_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.05	1.87	-	-	**1.27**	-	-	-
MW233	OCA	21 Oct 2020	0207_MW233_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.94	1.76	-	-	**1.27**	-	-	-
MW233	OCA	17 Apr 2021	0207_MW233_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.29	2.09	-	-	**1.50**	-	-	-
MW233	OCA	14 Oct 2021	0207_MW233_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.76	2.55	-	-	**1.97**	-	-	-
MW233	OCA	20 Apr 2022	0207_QC213_220420	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW233	OCA	20 Apr 2022	0207_QC113_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.35	1.25	-	-	**0.88**	-	-	-
MW233	OCA	20 Apr 2022	0207_MW233_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.35	1.23	-	-	**0.85**	-	-	-
MW233	OCA	24 Nov 2022	0207_MW233_221124	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.11	1.01	-	-	**0.74**	-	-	-
MW233	OCA	13 Apr 2023	0207_QC205_230413	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW233	OCA	13 Apr 2023	0207_MW233_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.58	1.44	-	-	**1.03**	-	-	-
MW233	OCA	13 Apr 2023	0207_QC105_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.69	1.51	-	-	**1.08**	-	-	-
MW233	OCA	26 Oct 2023	0207_MW233_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	1.09	-	-	**0.83**	-	-	-
MW233	OCA	03 Apr 2024	0207_QC204_240403	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW233	OCA	03 Apr 2024	0207_QC104_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	0.99	-	-	**0.76**	-	-	-
MW233	OCA	03 Apr 2024	0207_MW233_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.98	0.90	-	-	**0.67**	-	-	-
MW233	OCA	10 Oct 2024	0207_MW233_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.02	-	0.95	-	**0.75**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums							PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																								
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**				
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																				
MW235	OCA	24 Oct 2018	AACO-MWFI-B-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	38.2	33.4	-	-	**16.8**	-	-	-
MW235	OCA	23 Oct 2019	0207_MW235_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	57.7	50.8	-	-	**27.8**	-	-	-
MW235	OCA	01 Apr 2020	0207_QC222_200401	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW235	OCA	01 Apr 2020	0207_QC122_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	45.9	41.0	-	-	**21.5**	-	-	-
MW235	OCA	01 Apr 2020	0207_MW235_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	45.4	40.4	-	-	**21.2**	-	-	-
MW235	OCA	20 Oct 2020	0207_MW235_201020	OMP Oct 2020	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	42.0	37.0	-	-	**18.1**	-	-	-
MW235	OCA	14 Apr 2021	0207_MW235_210414	OMP Apr 2021	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.09[#2]	<0.04[#2]	<0.09[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	59.5	51.7	-	-	**25.4**	-	-	-
MW235	OCA	13 Oct 2021	0207_MW235_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	63.5	54.7	-	-	**27.3**	-	-	-
MW235	OCA	20 Apr 2022	0207_MW235_220420	OMP Apr 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	19.2	17.3	-	-	**10.7**	-	-	-
MW235	OCA	26 Oct 2022	0207_MW235_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	33.0	29.5	-	-	**14.3**	-	-	-
MW235	OCA	11 Apr 2023	0207_MW235_230411	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	28.0	24.3	-	-	**11.2**	-	-	-
MW235	OCA	26 Oct 2023	0207_MW235_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	36.2	32.1	-	-	**15.3**	-	-	-
MW235	OCA	04 Apr 2024	0207_MW235_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.4	24.4	-	-	**11.0**	-	-	-
MW235	OCA	10 Oct 2024	0207_MW235_241010	OMP Oct 2024	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	38.1	-	33.5	-	**13.2**	-	-	-
MW236	OCA	24 Oct 2018	AACO-MWF1-C-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	42.7	38.4	-	-	**23.9**	-	-	-
MW236	OCA	23 Oct 2019	0207_MW236_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	36.4	33.2	-	-	**22.0**	-	-	-
MW236	OCA	01 Apr 2020	0207_MW236_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.0	19.0	-	-	**12.2**	-	-	-
MW236	OCA	20 Oct 2020	0207_MW236_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	30.3	27.5	-	-	**15.2**	-	-	-
MW236	OCA	14 Apr 2021	0207_MW236_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.0	25.8	-	-	**14.4**	-	-	-
MW236	OCA	13 Oct 2021	0207_QC260_21013	OMP Oct 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW236	OCA	13 Oct 2021	0207_MW236_211013	OMP Oct 2021	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	24.8	22.2	-	-	**11.4**	-	-	-
MW236	OCA	13 Oct 2021	0207_QC160_211013	OMP Oct 2021	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	60.7	52.9	-	-	**25.9**	-	-	-
MW236	OCA	20 Apr 2022	0207_MW236_220420	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	5.94	5.48	-	-	**2.80**	-	-	-
MW236	OCA	26 Oct 2022	0207_MW236_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.16	7.59	-	-	**1.42**	-	-	-
MW236	OCA	11 Apr 2023	0207_MW236_230411	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.48	8.62	-	-	**3.22**	-	-	-
MW236	OCA	26 Oct 2023	0207_MW236_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	<0.05	<0.05	9.88	8.99	-	-	**2.62**	-	-	-
MW236	OCA	04 Apr 2024	0207_QC207_240404	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.051	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW236	OCA	04 Apr 2024	0207_QC107_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.3	11.4	-	-	**5.19**	-	-	-
MW236	OCA	04 Apr 2024	0207_MW236_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.2	11.4	-	-	**5.02**	-	-	-
MW236	OCA	10 Oct 2024	0207_MW236_241010	OMP Oct 2024	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.46[#2]	<0.05	<0.05	28.4	-	26.1	-	**17.0**	-	-	-
MW241	OCA	24 Oct 2018	AACO-MWF1-H-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.78	7.43	-	-	**6.58**	-	-	-
MW241	OCA	23 Oct 2019	0207_MW241_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.41	5.15	-	-	**4.43**	-	-	-
MW241	OCA	01 Apr 2020	0207_MW241_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.67	6.36	-	-	**5.50**	-	-	-
MW241	OCA	20 Oct 2020	0207_MW241_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.99	4.74	-	-	**4.06**	-	-	-
MW241	OCA	14 Apr 2021	0207_MW241_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.11	5.84	-	-	**5.21**	-	-	-
MW241	OCA	13 Oct 2021	0207_MW241_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.15	6.79	-	-	**5.96**	-	-	-
MW241	OCA	19 Apr 2022	0207_MW241_220419	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	5.87	5.65	-	-	**5.09**	-	-	-
MW241	OCA	26 Oct 2022	0207_MW241_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.95	8.70	-	-	**8.02**	-	-	-
MW241	OCA	11 Apr 2023	0207_MW241_230411	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.45	6.20	-	-	**5.68**	-	-	-
MW241	OCA	26 Oct 2023	0207_MW241_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.82	<0.05	<0.05	6.65	6.43	-	-	**5.10**	-	-	-
MW241	OCA	04 Apr 2024	0207_QC206_240404	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW241	OCA	04 Apr 2024	0207_QC106_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.55	5.36	-	-	**4.97**	-	-	-
MW241	OCA	04 Apr 2024	0207_MW241_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.52	5.35	-	-	**4.98**	-	-	-
MW241	OCA	10 Oct 2024	0207_MW241_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.37	-	6.17	-	**5.84**	-	-	-
MW243	OCA	05 Apr 2024	0207_MW242_240405	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW245	OCA	29 Nov 2018	AACO_QC108_181129	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.65	0.61	-	-	**0.50**	-	-	-
MW245	OCA	29 Nov 2018	AACO_MWG1-C-LA_1811	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.63	0.59	-	-	**0.46**	-	-	-
MW245	OCA	23 Oct 2019	0207_MW245_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.52	0.48	-	-	**0.38**	-	-	-
MW245	OCA	26 Mar 2020	0207_MW245_200326	OMP Apr 2020	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.08[#2]	<0.03[#2]	<0.08[#2]	<0.03[#2]	<0.05	<0.05	<0.05	<0.05	0.63	0.59	-	-	**0.49**	-	-	-
MW245	OCA	20 Oct 2020	0207_QC233_201020	OMP Oct 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.012	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW245	OCA	20 Oct 2020	0207_QC133_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.51	0.47	-	-	**0.36**	-	-	-
MW245	OCA	20 Oct 2020	0207_MW245_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.50	0.46	-	-	**0.35**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW245	OCA	20 Apr 2021	0207_MW245_210420	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.46	0.42	-	-	**0.32**	-	-	-
MW245	OCA	11 Oct 2021	0207_QC255_21011	OMP Oct 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW245	OCA	11 Oct 2021	0207_QC155_211011	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.55	0.50	-	-	**0.39**	-	-	-
MW245	OCA	11 Oct 2021	0207_MW245_211011	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.53	0.49	-	-	**0.38**	-	-	-
MW245	OCA	18 Apr 2022	0207_MW245_220418	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	0.32	-	-	**0.28**	-	-	-
MW245	OCA	18 Apr 2022	0207_QC108_220418	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.44	0.40	-	-	**0.32**	-	-	-
MW245	OCA	18 Apr 2022	0207_QC208_220418	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW245	OCA	03 Nov 2022	0207_MW245_221103	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.44	0.40	-	-	**0.31**	-	-	-
MW245	OCA	13 Apr 2023	0207_MW245_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.62	0.57	-	-	**0.45**	-	-	-
MW245	OCA	26 Oct 2023	0207_MW245_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	1.73	<0.05	<0.05	2.19	2.15	-	-	**0.33**	-	-	-
MW245	OCA	05 Apr 2024	0207_MW245_240405	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	0.29	-	-	**0.22**	-	-	-
MW245	OCA	08 Oct 2024	0207_MW245_241008	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.40	-	0.40	-	**0.30**	-	-	-
MW249	OCA	25 Oct 2018	AACO-MWN-D-181025	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.58	4.89	-	-	**2.43**	-	-	-
MW249	OCA	23 Oct 2019	0207_MW249_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.33	5.57	-	-	**3.21**	-	-	-
MW249	OCA	01 Apr 2020	0207_QC223_200401	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW249	OCA	01 Apr 2020	0207_QC123_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.19	7.15	-	-	**3.74**	-	-	-
MW249	OCA	01 Apr 2020	0207_MW249_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.46	7.36	-	-	**4.04**	-	-	-
MW249	OCA	20 Oct 2020	0207_MW249_201020	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.38	7.40	-	-	**4.08**	-	-	-
MW249	OCA	14 Apr 2021	0207_MW249_210414	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.22	7.22	-	-	**4.19**	-	-	-
MW249	OCA	13 Oct 2021	0207_MW249_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.52	8.41	-	-	**4.52**	-	-	-
MW249	OCA	19 Apr 2022	0207_QC211_220419	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW249	OCA	19 Apr 2022	0207_QC111_220419	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.32	4.76	-	-	**2.63**	-	-	-
MW249	OCA	19 Apr 2022	0207_MW249_220419	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	5.30	4.73	-	-	**2.69**	-	-	-
MW249	OCA	26 Oct 2022	0207_QC264_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.15	4.56	-	-	**2.55**	-	-	-
MW249	OCA	26 Oct 2022	0207_QC164_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.43	4.83	-	-	**2.60**	-	-	-
MW249	OCA	26 Oct 2022	0207_MW249_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.09	6.32	-	-	**3.39**	-	-	-
MW249	OCA	11 Apr 2023	0207_MW249_230411	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.12	7.94	-	-	**4.41**	-	-	-
MW249	OCA	26 Oct 2023	0207_MW249_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.47	6.56	-	-	**3.61**	-	-	-
MW249	OCA	04 Apr 2024	0207_QC208_240404	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW249	OCA	04 Apr 2024	0207_QC108_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.77	7.52	-	-	**4.30**	-	-	-
MW249	OCA	04 Apr 2024	0207_MW249_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.58	6.51	-	-	**3.52**	-	-	-
MW249	OCA	10 Oct 2024	0207_MW249_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.45	-	8.28	-	**4.50**	-	-	-
MW252	OCA	24 Oct 2018	AACO-MWN-I-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	49.6	45.9	-	-	**36.7**	-	-	-
MW252	OCA	23 Oct 2019	0207_MW252_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	49.7	46.8	-	-	**39.5**	-	-	-
MW252	OCA	01 Apr 2020	0207_MW252_200401	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	39.6	36.5	-	-	**30.2**	-	-	-
MW252	OCA	20 Oct 2020	0207_MW252_201020	OMP Oct 2020	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	28.8	27.3	-	-	**22.8**	-	-	-
MW252	OCA	14 Apr 2021	0207_MW252_210414	OMP Apr 2021	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	<0.10[#2]	41.8	38.4	-	-	**28.5**	-	-	-
MW252	OCA	13 Oct 2021	0207_MW252_211013	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	22.9	21.2	-	-	**17.3**	-	-	-
MW252	OCA	20 Apr 2022	0207_QC212_220420	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW252	OCA	20 Apr 2022	0207_QC112_220420	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.78	6.46	-	-	**5.35**	-	-	-
MW252	OCA	20 Apr 2022	0207_MW252_220420	OMP Apr 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	6.69	6.44	-	-	**5.45**	-	-	-
MW252	OCA	26 Oct 2022	0207_MW252_221026	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.20	3.09	-	-	**2.73**	-	-	-
MW252	OCA	11 Apr 2023	0207_MW252_230411	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	14.4	13.6	-	-	**11.3**	-	-	-
MW252	OCA	26 Oct 2023	0207_QC103_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	20.8	19.8	-	-	**15.9**	-	-	-
MW252	OCA	26 Oct 2023	0207_QC203_231026	OMP Oct 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.067	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW252	OCA	26 Oct 2023	0207_MW252_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.28	<0.05	<0.05	15.9	15.2	-	-	**12.1**	-	-	-
MW252	OCA	04 Apr 2024	0207_MW252_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	19.8	18.5	-	-	**14.6**	-	-	-
MW252	OCA	04 Apr 2024	0207_QC105_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.3	19.9	-	-	**15.9**	-	-	-
MW252	OCA	04 Apr 2024	0207_QC205_240404	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW252	OCA	10 Oct 2024	0207_MW252_241010	OMP Oct 2024	<0.22[#2]	<0.09[#2]	<0.22[#2]	<0.22[#2]	<0.09[#2]	<0.22[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	<0.09[#2]	69.6	-	67.5	-	**60.6**	-	-	-
MW255	OCA	18 Oct 2018	AACO-MWO-A-LA-181018	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	0.16	-	-	**0.14**	-	-	-
MW255	OCA	23 Oct 2019	0207_MW255_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	0.20	-	-	**0.18**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW255	OCA	26 Mar 2020	0207_MW255_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.24	-	-	**0.20**	-	-	-
MW255	OCA	21 Oct 2020	0207_MW255_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	0.21	-	-	**0.19**	-	-	-
MW255	OCA	13 Apr 2021	0207_QC142_210413	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	0.14	-	-	**0.14**	-	-	-
MW255	OCA	13 Apr 2021	0207_MW255_210413	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	0.15	-	-	**0.15**	-	-	-
MW255	OCA	13 Apr 2021	0207_QC242_210413	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW255	OCA	15 Oct 2021	0207_MW255_211015	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.30	0.27	-	-	**0.22**	-	-	-
MW255	OCA	15 Apr 2022	0207_MW255_220415	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-	0.04	-	-	-
MW255	OCA	26 Oct 2023	0207_MW255_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.35	0.32	-	-	**0.29**	-	-	-
MW255	OCA	10 Apr 2024	0207_MW255_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.27	0.27	-	-	**0.23**	-	-	-
MW257	OCA	22 Oct 2018	AACO-MWO-B-LA-181022	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	0.45	-	-	**0.43**	-	-	-
MW257	OCA	23 Oct 2019	0207_MW257_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.35	0.35	-	-	**0.35**	-	-	-
MW257	OCA	26 Mar 2020	0207_QC217_200326	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW257	OCA	26 Mar 2020	0207_MW257_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.42	0.42	-	-	**0.41**	-	-	-
MW257	OCA	26 Mar 2020	0207_QC117_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.47	0.47	-	-	**0.47**	-	-	-
MW257	OCA	21 Oct 2020	0207_MW257_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	0.06	-	-	0.06	-	-	-
MW257	OCA	17 Apr 2021	0207_MW257_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	0.17	-	-	**0.17**	-	-	-
MW257	OCA	14 Oct 2021	0207_MW257_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.24	-	-	**0.24**	-	-	-
MW257	OCA	15 Apr 2022	0207_MW257_220415	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW257	OCA	27 Oct 2022	0207_MW257_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	0.23	-	-	**0.23**	-	-	-
MW257	OCA	14 Apr 2023	0207_MW257_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.24	-	-	**0.24**	-	-	-
MW257	OCA	26 Oct 2023	0207_MW257_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW257	OCA	10 Apr 2024	0207_MW257_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	-	**0.20**	-	-	-
MW257	OCA	09 Oct 2024	0207_MW257_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	-	0.23	-	**0.23**	-	-	-
MW262	OCA	18 Oct 2018	AACO-MWO-D-UA-18101	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.30	0.30	-	-	**0.27**	-	-	-
MW262	OCA	21 Oct 2019	0207_MW262_191024	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.60	0.56	-	-	**0.46**	-	-	-
MW262	OCA	24 Mar 2020	0207_MW262_200323	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	0.74	-	-	**0.62**	-	-	-
MW262	OCA	21 Oct 2020	0207_MW262_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	0.30	-	-	**0.19**	-	-	-
MW262	OCA	19 Apr 2021	0207_QC254_210419	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW262	OCA	19 Apr 2021	0207_MW262_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.68	0.62	-	-	**0.50**	-	-	-
MW262	OCA	19 Apr 2021	0207_QC154_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.68	0.64	-	-	**0.53**	-	-	-
MW262	OCA	14 Oct 2021	0207_MW262_211014	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	0.54	-	-	**0.42**	-	-	-
MW262	OCA	16 Apr 2022	0207_MW262_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.70	0.66	-	-	**0.53**	-	-	-
MW262	OCA	02 Nov 2022	0207_MW262_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.53	0.49	-	-	**0.34**	-	-	-
MW262	OCA	14 Apr 2023	0207_MW262_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.00	0.91	-	-	**0.71**	-	-	-
MW262	OCA	26 Oct 2023	0207_MW262_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	0.72	-	-	**0.55**	-	-	-
MW262	OCA	11 Apr 2024	0207_MW262_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.52	0.48	-	-	**0.36**	-	-	-
MW262	OCA	09 Oct 2024	0207_MW262_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	-	0.97	-	**0.74**	-	-	-
MW265	OCA	25 Oct 2018	AACO-MWO-F-AL-181025	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	-	0.05	-	-	-
MW265	OCA	23 Mar 2020	0207_MW265_200323	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW265	OCA	12 Apr 2021	0207_MW265_210412	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW265	OCA	16 Apr 2022	0207_MW265_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW265	OCA	14 Apr 2023	0207_MW265_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW265	OCA	11 Apr 2024	0207_MW265_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW266	OCA	23 Mar 2020	0207_MW266_200323	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.6	10.7	-	-	**7.52**	-	-	-
MW266	OCA	07 Apr 2020	0207_MWO-G-AL_200407	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.43	3.92	-	-	**2.88**	-	-	-
MW266	OCA	23 Mar 2021	0207_MWO-G-AL_210323	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.63	2.42	-	-	**1.72**	-	-	-
MW266	OCA	20 Apr 2021	0207_MW266_210420	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	10.7	9.76	-	-	**6.57**	-	-	-
MW266	OCA	08 Feb 2022	0207_MW266_220208	OMR Feb 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.06	6.38	-	-	**4.60**	-	-	-
MW266	OCA	16 Apr 2022	0207_MW266_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.77	8.08	-	-	**5.68**	-	-	-
MW266	OCA	13 Apr 2023	0207_MW266_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.5	12.3	-	-	**8.48**	-	-	-
MW266	OCA	27 Apr 2023	0207_MWO-G-AL_230427	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.53	5.94	-	-	**4.23**	-	-	-
MW266	OCA	11 Apr 2024	0207_MW266_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.90	7.21	-	-	**5.12**	-	-	-
MW267	OCA	25 Mar 2020	0207_MW267_200325	OMP Apr 2020	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	<0.05[#2]	<0.05[#2]	-	-	<0.05[#2]	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW267	OCA	15 Apr 2021	0207_MW267_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-	0.04	-	-	-
MW267	OCA	13 Apr 2022	0207_MW267_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.80	0.76	-	-	**0.47**	-	-	-
MW267	OCA	18 Apr 2023	0207_MW267_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.66	0.61	-	-	**0.27**	-	-	-
MW267	OCA	08 Apr 2024	0207_MW267_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.42	0.42	-	-	**0.37**	-	-	-
MW268	OCA	25 Mar 2020	0207_MW268_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.00	0.94	-	-	**0.73**	-	-	-
MW268	OCA	15 Apr 2021	0207_MW268_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	0.55	-	-	**0.43**	-	-	-
MW268	OCA	13 Apr 2022	0207_MW268_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.71	0.66	-	-	**0.54**	-	-	-
MW268	OCA	18 Apr 2023	0207_MW268_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.18	1.06	-	-	**0.73**	-	-	-
MW268	OCA	08 Apr 2024	0207_MW268_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.27	1.14	-	-	**0.74**	-	-	-
MW269	WCM	19 Oct 2018	AACO-MWO-H-WCM-181	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	-	0.05	-	-	-
MW269	WCM	25 Oct 2019	0207_MW269_191025	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.19	<0.05	<0.05	0.35	0.35	-	-	**0.13**	-	-	-
MW269	WCM	25 Mar 2020	0207_MW269_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	<0.05	<0.05	0.22	0.22	-	-	**0.13**	-	-	-
MW269	WCM	21 Oct 2020	0207_MW269_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW269	WCM	15 Apr 2021	0207_MW269_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.14	0.14	-	-	**0.14**	-	-	-
MW269	WCM	15 Oct 2021	0207_MW269_211015	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	-	**0.12**	-	-	-
MW269	WCM	13 Apr 2022	0207_MW269_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW269	WCM	02 Nov 2022	0207_MW269_221102	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	0.10	-	-	**0.10**	-	-	-
MW269	WCM	18 Apr 2023	0207_MW269_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.22	<0.05	<0.05	0.22	0.22	-	-	<0.01	-	-	-
MW269	WCM	25 Oct 2023	0207_MW269_231025	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	0.15	0.15	-	-	**0.09**	-	-	-
MW269	WCM	08 Apr 2024	0207_MW269_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.16	<0.05	<0.05	0.23	0.23	-	-	0.07	-	-	-
MW269	WCM	09 Oct 2024	0207_MW269_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.27	<0.05	<0.05	0.34	-	0.34	-	0.07	-	-	-
MW271	MRV	25 Mar 2020	0207_MW271_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.32	<0.05	<0.05	0.32	0.32	-	-	<0.01	-	-	-
MW271	MRV	15 Apr 2021	0207_MW271_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW271	MRV	13 Apr 2022	0207_MW271_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW271	MRV	10 May 2023	0207_MW271_230510	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	0.06	0.06	-	-	<0.01	-	-	-
MW271	MRV	10 Apr 2024	0207_MW271_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	<0.01	-	-	-
MW272	OCA	23 Oct 2019	0207_MW272_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.69	0.63	-	-	**0.49**	-	-	-
MW272	OCA	26 Mar 2020	0207_MW272_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.86	0.78	-	-	**0.58**	-	-	-
MW272	OCA	21 Oct 2020	0207_QC235_201021	OMP Oct 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW272	OCA	21 Oct 2020	0207_QC135_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.95	0.87	-	-	**0.65**	-	-	-
MW272	OCA	21 Oct 2020	0207_MW272_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.93	0.86	-	-	**0.65**	-	-	-
MW272	OCA	19 Apr 2021	0207_MW272_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	0.83	-	-	**0.58**	-	-	-
MW272	OCA	15 Oct 2021	0207_MW272_211015	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.13	1.01	-	-	**0.76**	-	-	-
MW272	OCA	15 Apr 2022	0207_QC105_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.55	0.51	-	-	**0.41**	-	-	-
MW272	OCA	16 Apr 2022	0207_QC205_220416	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW272	OCA	16 Apr 2022	0207_MW272_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.49	0.45	-	-	**0.34**	-	-	-
MW272	OCA	27 Oct 2022	0207_MW272_221027	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.58	0.53	-	-	**0.39**	-	-	-
MW272	OCA	13 Apr 2023	0207_QC207_230413	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW272	OCA	13 Apr 2023	0207_MW272_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.90	0.82	-	-	**0.59**	-	-	-
MW272	OCA	13 Apr 2023	0207_QC107_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.98	0.86	-	-	**0.64**	-	-	-
MW272	OCA	26 Oct 2023	0207_MW272_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.76	0.70	-	-	**0.54**	-	-	-
MW272	OCA	08 Apr 2024	0207_MW272_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.66	0.58	-	-	**0.44**	-	-	-
MW272	OCA	09 Oct 2024	0207_MW272_241009	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	-	0.79	-	**0.58**	-	-	-
MW273	WCM	26 Mar 2020	0207_MW273_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW273	WCM	19 Apr 2021	0207_QC152_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW273	WCM	19 Apr 2021	0207_MW273_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW273	WCM	19 Apr 2021	0207_QC252_210419	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW273	WCM	16 Apr 2022	0207_MW273_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW273	WCM	13 Apr 2023	0207_MW273_230413	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW273	WCM	08 Apr 2024	0207_MW273_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW274	OCA	25 Mar 2020	0207_MW274_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-	0.01	-	-	-
MW274	OCA	17 Apr 2021	0207_MW274_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	<0.01	-	-	-
MW274	OCA	15 Apr 2022	0207_MW274_220415	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02[#2]	<0.02[#2]	-	-	<0.02[#2]	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW274	OCA	14 Apr 2023	0207_MW274_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	0.10	-	-	<0.01	-	-	-
MW274	OCA	11 Apr 2024	0207_MW274_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW275	MRV	25 Mar 2020	0207_MW275_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW275	MRV	17 Apr 2021	0207_MW275_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW275	MRV	15 Apr 2022	0207_MW275_220415	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02[#2]	<0.02[#2]	-	-	<0.02[#2]	-	-	-
MW275	MRV	14 Apr 2023	0207_QC108_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW275	MRV	14 Apr 2023	0207_MW275_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW275	MRV	14 Apr 2023	0207_QC208_230414	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW275	MRV	11 Apr 2024	0207_MW275_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW276	OCA	23 Oct 2019	0207_MW276_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	23.1	21.5	-	-	**17.8**	-	-	-
MW276	OCA	23 Mar 2020	0207_QC118_200323	OMP Apr 2020	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.10[#2]	<0.04[#2]	<0.10[#2]	<0.04[#2]	<0.05	<0.05	<0.05	<0.05	28.0	25.9	-	-	**21.9**	-	-	-
MW276	OCA	26 Mar 2020	0207_MW276_200326	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	28.5	26.0	-	-	**20.8**	-	-	-
MW276	OCA	26 Mar 2020	0207_QC218_200326	OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW276	OCA	21 Oct 2020	0207_MW276_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	25.9	24.1	-	-	**19.8**	-	-	-
MW276	OCA	19 Apr 2021	0207_MW276_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	25.3	23.4	-	-	**19.6**	-	-	-
MW276	OCA	19 Apr 2021	0207_QC153_210419	OMP Apr 2021	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	29.2	27.3	-	-	**22.6**	-	-	-
MW276	OCA	19 Apr 2021	0207_QC253_210419	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW276	OCA	14 Oct 2021	0207_MW276_211014	OMP Oct 2021	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	27.6	25.5	-	-	**20.6**	-	-	-
MW276	OCA	15 Apr 2022	0207_MW276_220415	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.5	22.9	-	-	**19.0**	-	-	-
MW276	OCA	24 Nov 2022	0207_MW276_221124	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.9	20.3	-	-	**16.6**	-	-	-
MW276	OCA	13 Apr 2023	0207_MW276_230413	OMP Apr 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	24.6	22.7	-	-	**18.4**	-	-	-
MW276	OCA	26 Oct 2023	0207_MW276_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.6	23.1	-	-	**19.4**	-	-	-
MW276	OCA	11 Apr 2024	0207_MW276_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	19.1	17.8	-	-	**15.1**	-	-	-
MW276	OCA	09 Oct 2024	0207_MW276_241009	OMP Oct 2024	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.05	<0.05	<0.05	20.2	-	19.0	-	**15.5**	-	-	-
MW278	OCA	25 Mar 2020	0207_MW278_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW278	OCA	16 Apr 2021	0207_MW278_210416	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW278	OCA	16 Apr 2022	0207_MW278_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW278	OCA	14 Apr 2023	0207_MW278_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW278	OCA	11 Apr 2024	0207_MW278_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW280	OCA	24 Mar 2020	0207_MW280_200324	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	-	**0.20**	-	-	-
MW280	OCA	17 Apr 2021	0207_MW280_210417	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	0.29	-	-	**0.25**	-	-	-
MW280	OCA	16 Apr 2022	0207_MW280_220414	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.28	0.28	-	-	**0.28**	-	-	-
MW280	OCA	14 Apr 2023	0207_MW280_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.24	-	-	**0.24**	-	-	-
MW280	OCA	11 Apr 2024	0207_MW280_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	0.16	-	-	**0.16**	-	-	-
MW281	OCA	02 Apr 2020	0207_MW281_200402	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.63	5.19	-	-	**4.00**	-	-	-
MW281	OCA	20 Apr 2021	0207_MW281_210420	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.14	4.72	-	-	**3.68**	-	-	-
MW281	OCA	14 Apr 2022	0207_MW281_220414	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.67	4.27	-	-	**3.36**	-	-	-
MW281	OCA	14 Apr 2023	0207_MW281_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.12	4.73	-	-	**3.75**	-	-	-
MW281	OCA	11 Apr 2024	0207_MW281_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.30	3.06	-	-	**2.47**	-	-	-
MW282	OCA	24 Mar 2020	0207_MW282_200324	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.05	0.99	-	-	**0.90**	-	-	-
MW282	OCA	15 Apr 2021	0207_QC247_210415	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW282	OCA	15 Apr 2021	0207_QC147_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.01	0.95	-	-	**0.86**	-	-	-
MW282	OCA	15 Apr 2021	0207_MW282_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.16	1.09	-	-	**0.97**	-	-	-
MW282	OCA	14 Apr 2022	0207_QC104_220415	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.22	1.19	-	-	**1.14**	-	-	-
MW282	OCA	15 Apr 2022	0207_QC204_220415	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW282	OCA	15 Apr 2022	0207_MW282_220415	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.30	1.26	-	-	**1.20**	-	-	-
MW282	OCA	14 Apr 2023	0207_MW282_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.42	2.29	-	-	**2.10**	-	-	-
MW282	OCA	11 Apr 2024	0207_MW282_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.00	0.98	-	-	**0.96**	-	-	-
MW283	OCA	25 Mar 2020	0207_MW283_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW283	OCA	20 Apr 2021	0207_MW283_210420	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW283	OCA	13 Apr 2022	0207_MW283_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW283	OCA	18 Apr 2023	0207_MW283_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW283	OCA	11 Apr 2024	0207_MW283_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW285	OCA	23 Oct 2018	AACO-MWO-T-AL-181023	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW285	OCA	23 Mar 2020	0207_MW285_200323	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW285	OCA	15 Apr 2021	0207_QC148_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW285	OCA	15 Apr 2021	0207_MW285_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW285	OCA	15 Apr 2021	0207_QC248_210415	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW285	OCA	16 Apr 2022	0207_MW285_220416	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW285	OCA	14 Apr 2023	0207_MW285_230414	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-	<0.01	-	-	-
MW285	OCA	11 Apr 2024	0207_MW285_240411	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW288	OCA	25 Mar 2020	0207_MW288_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW288	OCA	21 Apr 2021	0207_MW288_210421	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW288	OCA	21 Apr 2022	0207_MW288_220421	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW288	OCA	18 Apr 2023	0207_MW288_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW288	OCA	10 Apr 2024	0207_MW288_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW289	WCM	25 Mar 2020	0207_MW289_200325	OMP Apr 2020	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02[#2]	<0.02[#2]	-	-	<0.02[#2]	-	-	-
MW289	WCM	21 Apr 2021	0207_MW289_210421	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW289	WCM	21 Apr 2022	0207_MW289_220421	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW290	OCA	25 Mar 2020	0207_MW290_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.28	0.26	-	-	**0.24**	-	-	-
MW290	OCA	21 Apr 2021	0207_MW290_210421	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	0.29	-	-	**0.25**	-	-	-
MW290	OCA	21 Apr 2022	0207_MW290_220421	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	0.68	-	-	**0.42**	-	-	-
MW290	OCA	19 Apr 2023	0207_MW290_230419	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.35	0.29	-	-	**0.20**	-	-	-
MW290	OCA	09 Apr 2024	0207_MW290_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	0.20	-	-	**0.15**	-	-	-
MW291	WCM	25 Mar 2020	0207_MW291_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.28	<0.05	<0.05	0.28	0.28	-	-	<0.01	-	-	-
MW291	WCM	22 Oct 2020	0207_MW291_201022	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.05	<0.05	<0.05	0.05	0.05	-	-	<0.01	-	-	-
MW291	WCM	21 Apr 2021	0207_MW291_210421	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.07	<0.05	<0.05	0.10	0.10	-	-	0.03	-	-	-
MW291	WCM	21 Apr 2022	0207_MW291_220421	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW291	WCM	19 Apr 2023	0207_MW291_230419	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW291	WCM	09 Apr 2024	0207_MW291_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW292	OCA	25 Mar 2020	0207_MW292_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	0.32	-	-	**0.32**	-	-	-
MW292	OCA	19 Apr 2021	0207_MW292_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	0.31	-	-	**0.31**	-	-	-
MW292	OCA	14 Apr 2022	0207_QC202_220414	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW292	OCA	14 Apr 2022	0207_QC102_220414	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.34	0.34	-	-	**0.34**	-	-	-
MW292	OCA	14 Apr 2022	0207_MW292_220414	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.34	0.34	-	-	**0.34**	-	-	-
MW292	OCA	17 Apr 2023	0207_QC209_230417	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW292	OCA	17 Apr 2023	0207_MW292_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.28	0.28	-	-	**0.28**	-	-	-
MW292	OCA	17 Apr 2023	0207_QC109_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	0.37	-	-	**0.37**	-	-	-
MW292	OCA	09 Apr 2024	0207_MW292_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.28	0.28	-	-	**0.28**	-	-	-
MW293	WCM	19 Oct 2018	AACO-MWO-X-WCM-181	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW293	WCM	25 Mar 2020	0207_MW293_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW293	WCM	19 Apr 2021	0207_MW293_210419	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW293	WCM	14 Apr 2022	0207_MW293_220414	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW293	WCM	17 Apr 2023	0207_MW293_230417	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW293	WCM	09 Apr 2024	0207_MW293_240409	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW294	OCA	25 Mar 2020	0207_MW294_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.66	3.42	-	-	**1.32**	-	-	-
MW294	OCA	15 Apr 2021	0207_MW294_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.44	3.23	-	-	**1.27**	-	-	-
MW294	OCA	15 Apr 2022	0207_MW294_220415	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.05	2.99	-	-	**1.66**	-	-	-
MW294	OCA	18 Apr 2023	0207_MW294_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.43	1.21	-	-	**0.75**	-	-	-
MW294	OCA	08 Apr 2024	0207_MW294_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.16	2.99	-	-	**1.30**	-	-	-
MW295	WCM	25 Mar 2020	0207_MW295_200325	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.50	<0.05	<0.05	0.50	0.50	-	-	<0.01	-	-	-
MW295	WCM	21 Oct 2020	0207_MW295_201021	OMP Oct 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.25	<0.05	<0.05	0.25	0.25	-	-	<0.01	-	-	-
MW295	WCM	15 Apr 2021	0207_MW295_210415	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.21	<0.05	<0.05	0.21	0.21	-	-	<0.01	-	-	-
MW295	WCM	13 Apr 2022	0207_QC101_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW295	WCM	13 Apr 2022	0207_MW295_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW295	WCM	13 Apr 2022	0207_QC201_220413	OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.034	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW295	WCM	18 Apr 2023	0207_MW295_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW295	WCM	08 Apr 2024	0207_MW295_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW299	OCA	25 Oct 2018	AACO-MWS1-B-181025	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	60.9	56.2	-	-	**40.8**	-	-	-
MW299	OCA	25 Oct 2018	AACO_QC207_181025	OMP Oct 2018	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.029	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW299	OCA	25 Oct 2018	AACO-QC107-181025	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	67.2	62.3	-	-	**47.3**	-	-	-
MW299	OCA	10 Jul 2019	0207_MWS1-B_190710	OMP July 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.072	<0.001	<0.001	42.7	38.6	-	-	**21.1**	-	-	-
MW299	OCA	23 Oct 2019	0207_MW299_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	18.0	15.2	-	-	**7.70**	-	-	-
MW299	OCA	30 Oct 2019	0207_MWS1-B_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	0.001	0.070	<0.001	<0.001	41.5	37.8	-	-	**20.2**	-	-	-
MW299	OCA	30 Oct 2019	0207_QC1mw_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.063	<0.001	<0.001	44.8	40.8	-	-	**21.1**	-	-	-
MW299	OCA	05 Mar 2020	0207_QC1MW_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.0016[#2]	<0.002[#2]	0.053	<0.002[#2]	<0.002[#2]	34.8	31.7	-	-	**15.9**	-	-	-
MW299	OCA	05 Mar 2020	0207_MWS1-B_200305	OMP Apr 2020	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.004[#2]	<0.0016[#2]	<0.004[#2]	<0.0016[#2]	<0.002[#2]	0.044	<0.002[#2]	<0.002[#2]	40.5	36.3	-	-	**20.0**	-	-	-
MW299	OCA	26 Mar 2020	0207_MW299_200326	OMP Apr 2020	<0.16[#2]	<0.06[#2]	<0.16[#2]	<0.16[#2]	<0.06[#2]	<0.16[#2]	<0.06[#2]	<0.06[#2]	0.10	<0.06[#2]	<0.06[#2]	52.0	47.1	-	-	**27.2**	-	-	-
MW299	OCA	20 Oct 2020	0207_MW299_201020	OMP Oct 2020	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.07[#2]	<0.07[#2]	<0.07[#2]	<0.07[#2]	<0.07[#2]	55.8	50.3	-	-	**26.4**	-	-	-
MW299	OCA	17 Apr 2021	0207_MW299_210417	OMP Apr 2021	<0.53[#2]	<0.21[#2]	<0.53[#2]	<0.53[#2]	<0.21[#2]	<0.53[#2]	<0.21[#2]	<0.21[#2]	<0.21[#2]	<0.21[#2]	<0.21[#2]	49.2	44.5	-	-	**24.4**	-	-	-
MW299	OCA	12 Oct 2021	0207_MW299_211012	OMP Oct 2021	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.25	<0.05	<0.05	98.9	90.0	-	-	**46.7**	-	-	-
MW299	OCA	17 Apr 2022	0207_MW299_220417	OMP Apr 2022	<0.61[#2]	<0.24[#2]	<0.61[#2]	<0.61[#2]	<0.24[#2]	<0.61[#2]	<0.24[#2]	<0.24[#2]	1.20	<0.24[#2]	<0.24[#2]	310	287	-	-	**169**	-	-	-
MW299	OCA	26 Oct 2022	0207_MW299_221026	OMP Oct 2022	<2.38[#2]	<0.10[#2]	<0.24[#2]	<2.38[#2]	<0.10[#2]	<0.24[#2]	<0.95[#2]	<0.95[#2]	<0.95[#2]	<0.10[#2]	<0.10[#2]	313	294	-	-	**177**	-	-	-
MW299	OCA	12 Apr 2023	0207_MW299_230412	OMP Apr 2023	<1.09[#2]	<0.44[#2]	<1.09[#2]	<1.09[#2]	<0.44[#2]	<1.09[#2]	<0.44[#2]	<0.44[#2]	<0.44[#2]	<0.44[#2]	<0.44[#2]	361	346	-	-	**277**	-	-	-
MW299	OCA	24 Oct 2023	0207_MW299_231024	OMP Oct 2023	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.10[#2]	<0.10[#2]	0.69	<0.10[#2]	<0.10[#2]	282	262	-	-	**163**	-	-	-
MW299	OCA	02 Apr 2024	0207_MW299_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	51.7	48.6	-	-	**37.1**	-	-	-
MW299	OCA	10 Oct 2024	0207_MW299_241010	OMP Oct 2024	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.08	<0.05	<0.05	43.7	-	40.4	-	**23.8**	-	-	-
MW300	OCA	24 Oct 2018	AACO-MWS1-D-181024	OMP Oct 2018	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.14	<0.05	<0.05	189	166	-	-	**97.7**	-	-	-
MW300	OCA	10 Jul 2019	0207_MWS1-D_190710	OMP July 2019	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.050[#2]	<0.0200[#2]	<0.050[#2]	<0.0200[#2]	<0.020[#2]	0.044	<0.020[#2]	<0.020[#2]	140	125	-	-	**71.2**	-	-	-
MW300	OCA	23 Oct 2019	0207_MW300_191023	OMP Oct 2019	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.11	<0.05	<0.05	167	149	-	-	**80.9**	-	-	-
MW300	OCA	30 Oct 2019	0207_MWS1-D_191030	OMP Oct 2019	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	0.003	0.102	0.002	<0.001	15.4	13.9	-	-	**7.81**	-	-	-
MW300	OCA	05 Mar 2020	0207_MWS1-D_200305	OMP Apr 2020	<0.040[#2]	<0.0160[#2]	<0.040[#2]	<0.040[#2]	<0.0160[#2]	<0.040[#2]	<0.0160[#2]	<0.016[#2]	0.093	<0.016[#2]	<0.016[#2]	188	167	-	-	**95.1**	-	-	-
MW300	OCA	24 Mar 2020	0207_MW300_200324	OMP Apr 2020	<0.48[#2]	<0.19[#2]	<0.48[#2]	<0.48[#2]	<0.19[#2]	<0.48[#2]	<0.19[#2]	<0.19[#2]	<0.19[#2]	<0.19[#2]	<0.19[#2]	174	156	-	-	**90.6**	-	-	-
MW300	OCA	07 Apr 2020	0207_MWS1-D_200407	OMP Apr 2020	<0.17[#2]	<0.07[#2]	<0.17[#2]	<0.17[#2]	<0.07[#2]	<0.17[#2]	<0.07[#2]	<0.07[#2]	0.09	<0.07[#2]	<0.07[#2]	152	137	-	-	**83.6**	-	-	-
MW300	OCA	20 Oct 2020	0207_MW300_201020	OMP Oct 2020	<0.44[#2]	<0.18[#2]	<0.44[#2]	<0.44[#2]	<0.18[#2]	<0.44[#2]	<0.18[#2]	<0.18[#2]	<0.18[#2]	<0.18[#2]	<0.18[#2]	166	150	-	-	**93.8**	-	-	-
MW300	OCA	23 Mar 2021	0207_MWS1-D_210323	OMP Apr 2021	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.18[#2]	<0.07[#2]	<0.18[#2]	<0.07[#2]	<0.07[#2]	0.11	<0.07[#2]	<0.07[#2]	121	111	-	-	**68.1**	-	-	-
MW300	OCA	17 Apr 2021	0207_QC251_210417	OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.12	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW300	OCA	17 Apr 2021	0207_MW300_210417	OMP Apr 2021	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.25[#2]	<0.10[#2]	<0.25[#2]	<0.10[#2]	<0.10[#2]	0.16	<0.10[#2]	<0.10[#2]	172	157	-	-	**108**	-	-	-
MW300	OCA	17 Apr 2021	0207_QC151_210417	OMP Apr 2021	<0.21[#2]	<0.08[#2]	<0.21[#2]	<0.21[#2]	<0.08[#2]	<0.21[#2]	<0.08[#2]	<0.08[#2]	0.12	<0.08[#2]	<0.08[#2]	167	154	-	-	**106**	-	-	-
MW300	OCA	12 Oct 2021	0207_MW300_211012	OMP Oct 2021	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.13	<0.05	<0.05	151	137	-	-	**87.0**	-	-	-
MW300	OCA	08 Feb 2022	0207_MW300_220208	OMR Feb 2022	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	0.19	<0.05	<0.05	149	134	-	-	**85.6**	-	-	-
MW300	OCA	17 Apr 2022	0207_MW300_220417	OMP Apr 2022	<0.68[#2]	<0.27[#2]	<0.68[#2]	<0.68[#2]	<0.27[#2]	<0.68[#2]	<0.27[#2]	<0.27[#2]	<0.27[#2]	<0.27[#2]	<0.27[#2]	163	154	-	-	**120**	-	-	-
MW300	OCA	26 Oct 2022	0207_MW300_221026	OMP Oct 2022	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.10[#2]	<0.10[#2]	0.16	<0.10[#2]	<0.10[#2]	143	134	-	-	**101**	-	-	-
MW300	OCA	12 Apr 2023	0207_MW300_230412	OMP Apr 2023	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.24[#2]	<0.10[#2]	<0.24[#2]	<0.10[#2]	<0.10[#2]	0.12	<0.10[#2]	<0.10[#2]	139	128	-	-	**94.0**	-	-	-
MW300	OCA	24 Oct 2023	0207_MW300_231024	OMP Oct 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.62	<0.05	<0.05	135	125	-	-	**91.5**	-	-	-
MW300	OCA	02 Apr 2024	0207_MW300_240402	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.09	<0.05	<0.05	90.2	83.8	-	-	**63.0**	-	-	-
MW300	OCA	10 Oct 2024	0207_MW300_241010	OMP Oct 2024	<0.22[#2]	<0.09[#2]	<0.22[#2]	<0.22[#2]	<0.09[#2]	<0.22[#2]	<0.09[#2]	<0.09[#2]	<0.90[#2]	<0.09[#2]	<0.09[#2]	96.6	-	89.4	-	**68.3**	-	-	-
MW562	OCA	20 Apr 2022	0207_MW562_220420	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	23.0	20.7	-	-	**9.42**	-	-	-
MW562	OCA	03 Nov 2022	0207_MW562_221103	OMP Oct 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	28.4	25.5	-	-	**14.8**	-	-	-
MW562	OCA	12 Apr 2023	0207_MW562_230412	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.75	0.69	-	-	**0.20**	-	-	-
MW562	OCA	26 Oct 2023	0207_MW562_231026	OMP Oct 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.67	0.61	-	-	**0.21**	-	-	-
MW562	OCA	04 Apr 2024	0207_MW562_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	0.50	-	-	**0.21**	-	-	-
MW562	OCA	10 Oct 2024	0207_MW562_241010	OMP Oct 2024	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.23[#2]	<0.09[#2]	<0.23[#2]	<0.09[#2]	<0.09[#2]	0.16	<0.09[#2]	<0.09[#2]	43.3	-	38.8	-	**23.2**	-	-	-
MW563	OCA	20 Apr 2022	0207_MW563_220420	OMP Apr 2022	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.26	-	-	<0.02[#2]	-	-	-
MW563	OCA	03 Nov 2022	0207_MW563_221103	OMP Oct 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.48	0.44	-	-	**0.11**	-	-	-
MW563	OCA	12 Apr 2023	0207_MW563_230412	OMP Apr 2023	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.12[#2]	<0.05[#2]	<0.12[#2]	<0.05[#2]	<0.05	<0.05	<0.05	<0.05	30.7	27.2	-	-	**16.7**	-	-	-

Appendix B
Table 2
Historical Groundwater Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)/WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location Code	**Aquifer**	**Date**	**Field ID**	**Monitoring Round**																			
MW563	OCA	26 Oct 2023	0207_QC204_231026	OMP Oct 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.05	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW563	OCA	26 Oct 2023	0207_QC104_231026	OMP Oct 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	0.06	<0.05	<0.05	34.0	30.5	-	-	**20.6**	-	-	-
MW563	OCA	26 Oct 2023	0207_MW563_231026	OMP Oct 2023	<0.06[#2]	<0.02	<0.06[#2]	<0.06[#2]	<0.02	<0.06[#2]	<0.02	<0.05	<0.10[#2]	<0.05	<0.05	32.1	28.8	-	-	**19.4**	-	-	-
MW563	OCA	04 Apr 2024	0207_QC209_240404	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.035	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW563	OCA	04 Apr 2024	0207_QC109_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.8	26.2	-	-	**17.0**	-	-	-
MW563	OCA	04 Apr 2024	0207_MW563_240404	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.8	26.2	-	-	**16.6**	-	-	-
MW563	OCA	10 Oct 2024	0207_MW563_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	-	0.79	-	**0.34**	-	-	-
MW568	MRV*	08 Oct 2024	0207_MW568_241008	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.46	<0.05	<0.05	0.60	-	0.60	-	<0.01	-	-	-
MW569	OCA	10 Oct 2024	0207_MW569_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.11	-	1.94	-	**0.44**	-	-	-
MW570	OCA	10 Oct 2024	0207_MW570_S_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	-	0.82	-	**0.70**	-	-	-
MW570	OCA	10 Oct 2024	0207_MW570_D_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	-	0.83	-	**0.69**	-	-	-
MW570	OCA	10 Oct 2024	0207_QC106_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-	1.01	-	**0.78**	-	-	-
MW570	OCA	10 Oct 2024	0207_QC206_241010	OMP Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	1.85	-	1.64	0.48	**1.22**	1.26	-	-
MW571	OCA	10 Oct 2024	0207_MW571_D_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.27	-	3.03	-	**2.28**	-	-	-
MW571	OCA	10 Oct 2024	0207_MW571_S_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.08	-	6.50	-	**5.27**	-	-	-
MW572	OCA	10 Oct 2024	0207_MW572_S_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.62	-	8.82	-	**5.76**	-	-	-
MW572	OCA	10 Oct 2024	0207_MW572_D_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.36	-	8.39	-	**5.57**	-	-	-
MW573	OCA	10 Oct 2024	0207_MW573_D_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.08	<0.05	<0.05	9.68	-	8.89	-	**5.74**	-	-	-
MW573	OCA	10 Oct 2024	0207_MW573_S_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	10.3	-	9.24	-	**6.36**	-	-	-
MW574	OCA	08 Oct 2024	0207_MW574_D_241008	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	-	0.77	-	**0.59**	-	-	-
MW574	OCA	08 Oct 2024	0207_MW574_S_241008	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.97	-	0.89	-	**0.59**	-	-	-
MW575	OCA	10 Oct 2024	0207_MW575_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.95	-	6.35	-	**4.78**	-	-	-
MW575	OCA	10 Oct 2024	0207_QC105_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.18	-	6.52	-	**4.97**	-	-	-
MW575	OCA	10 Oct 2024	0207_QC205_241010	OMP Oct 2024	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	7.19	-	6.48	2.54	**4.7**	4.84	-	-
MW576	OCA	10 Oct 2024	0207_MW576_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	-	0.45	-	**0.40**	-	-	-
MW577	OCA	10 Oct 2024	0207_MW577_241010	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.04[#2]	-	<0.04[#2]	-	<0.04[#2]	-	-	-
MW578	OCA	08 Oct 2024	0207_MW578_241008	OMP Oct 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.60	-	0.55	-	**0.44**	-	-	-

Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#2 Reported Analyte LOR is higher than Requested Analyte LOR
#3 The LORs have been raised due to matrix interference
Locations where new maximums were recorded for PFOA and PFHxS + PFOS
Locations where new minimums were recorded for PFOA and PFHxS + PFOS
*Assumed based on depth. Not defined in JBS&G Report.
OCA = Oakey Creek Alluvium, MRV = Main Range Volcanics, WCM = Walloon Coal Measures

Location ID	Location	Sample Date	DO (mg/L) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	E_r (mV) *Field measure-ment*	E_h (mV)	Temp (°C) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
SW004	Oakey Creek	13/04/2021	6.96	808	7.99	71.6	276.6	21.7	Medium	Clear	Light organic odour	No sheen	Grab sample
SW004	Oakey Creek	14/04/2022	8.080	1055.000	8.230	118.300	323	23.300	Medium	Clear	No odour	No sheen	Grab sample
SW004	Oakey Creek	15/03/2023	5.750	927.000	8.110	36.400	241	24.900	Medium	Clear	No odour	No sheen	Grab sample
SW004	Oakey Creek	12/04/2024	5.05	803	8.02	-246.6	-41.6	19.9	High	Brown	No odour	No sheen	Grab sample
SW009	Drain 2	13/04/2021	5.62	228.3	7.7	142.9	347.9	21.1	Medium	Clear	Light organic odour	No sheen	Grab sample
SW009	Drain 2	18/04/2022	4.880	94.800	8.920	82.700	288	18.100	Medium	Clear	No odour	No sheen	Grab sample
SW009	Drain 2	15/03/2023	3.230	93.100	8.050	27.700	233	22.400	Low	Clear	No odour	No sheen	Grab sample
SW009	Drain 2	12/04/2024	1.63	1184	6.96	-211.5	-6.5	16.8	Low	Brown	No odour	No sheen	Grab sample
SW010	Oakey Creek	13/04/2021	3.4	218.3	7.07	124.1	329.1	23.5	Low	Clear	No odour	No sheen	Grab sample
SW010	Oakey Creek	16/04/2022	3.660	365.600	7.560	107.600	313	20.600	Medium	Clear	No odour	No sheen	Grab sample
SW010	Oakey Creek	15/03/2023	5.660	972.000	8.050	38.800	244	24.800	Medium	Clear	No odour	No sheen	Grab sample
SW010	Oakey Creek	12/04/2024	3.24	512	7.36	-291.4	-86.4	19.6	Medium	Brown	No odour	No sheen	Grab sample
SW011	Oakey Creek	13/04/2021	1.62	194.4	6.8	134.9	339.9	20.9	Medium	Clear	No odour	Biosheen appearance	Grab sample
SW011	Oakey Creek	15/04/2022	2.980	386.300	7.340	132.300	337	22.400	Medium	Clear	No odour	No sheen	Grab sample
SW011	Oakey Creek	15/03/2023	4.870	927.000	8.060	49.500	255	24.300	Medium	Clear	No odour	No sheen	Grab sample
SW011	Oakey Creek	12/04/2024	0.86	502	6.95	-226.7	-21.7	17.6	Medium	Brown	No odour	No sheen	Grab sample
SW012	Oakey Creek	13/04/2021	4.64	181.5	7.32	128.2	333.2	28.0	Medium	Clear	No odour	No sheen	Grab sample
SW012	Oakey Creek	15/04/2022	1.970	417.600	7.590	131.800	337	21.400	Medium	Clear	No odour	No sheen	Grab sample
SW012	Oakey Creek	15/03/2023	4.640	637.000	8.130	75.300	280	24.700	Medium	Clear	No odour	No sheen	Grab sample
SW012	Oakey Creek	12/04/2024	2.75	572	7.2	-154.1	50.9	19.3	High	Brown	No odour	No sheen	Grab sample
SW013	Oakey Creek	13/04/2021	1.88	169	7.21	93.9	298.9	22.5	Medium	Clear	Light organic odour	No sheen	Grab sample
SW013	Oakey Creek	16/04/2022	3.260	470.000	7.820	118.000	323	21.800	Medium	Brown	No odour	No sheen	Grab sample
SW013	Oakey Creek	15/03/2023	3.710	573.000	8.340	5.400	210	26.300	Medium	Clear	No odour	No sheen	Grab sample
SW013	Oakey Creek	12/04/2024	2.8	360.7	7.23	-113.9	91.1	17.3	Medium	Brown	No odour	No sheen	Grab sample
SW019	Drain 3	23/03/2021	Grab samples. No quality parameter field measurements were collected as a functional water quality meter was not available.										
SW019	Drain 3	22/03/2022	8.160	180.600	8.380	21.900	227	24.300	Medium	Clear	No odour	No sheen	Grab sample
SW019	Drain 3	15/03/2023	0.200	1790.000	7.630	47.600	253	34.900	Low	Clear	No odour	No sheen	Grab sample
SW019	Drain 3	12/04/2024	-	-	-	-	-	-	-	-	-	-	Dry
SW021	Drain 3	23/03/2021	-	-	-	-	-	-	-	-	-	-	
SW021	Drain 3	22/03/2022	0.680	349.900	7.310	16.000	221	28.900	Medium	Clear	No odour	No sheen	Grab sample
SW021	Drain 3	15/03/2023	3.820	82.700	7.760	57.000	262	26.000	Low	Clear	No odour	No sheen	Grab sample
SW021	Drain 3	3/04/2024	-	-	-	-	-	-	-	-	-	-	Dry
SW024	Drain 2	23/03/2021	-	-	-	-	-	-	-	-	-	-	
SW024	Drain 2	22/03/2022	9.680	138.100	7.710	10.400	215	27.000	Low	Clear	No odour	Biosheen	Grab sample
SW024	Drain 2	15/03/2023	2.360	131.400	7.480	39.000	244	26.900	Low	Clear	No odour	No sheen	Grab sample
SW024	Drain 2	3/04/2024	3.66	474.6	6.88	88.7	293.7	28.1	Clear	Brown	No odour	No sheen	Grab sample
SW025	Drain 2	23/03/2021	-	-	-	-	-	-	-	-	-	-	
SW025	Drain 2	22/03/2022	14.780	171.700	8.840	-5.300	200	28.600	Medium	Clear	No odour	No sheen	Grab sample
SW025	Drain 2	15/03/2023	3.920	224.100	7.350	89.100	294	26.300	Low	Clear	No odour	No sheen	Grab sample
SW025	Drain 2	12/04/2024	3.12	124.4	6.95	-317.5	-112.5	20.8	Clear	Brown	No odour	No sheen	Grab sample
SW026	Drain 1	23/03/2021	-	-	-	-	-	-	-	-	-	-	
SW026	Drain 1	22/03/2022	5.920	175.800	7.740	4.900	210	26.000	Turbid	Clear	No odour	Biosheen	Grab sample
SW026	Drain 1	15/03/2023	0.500	179.200	7.530	13.300	218	23.400	Low	Clear	No odour	No sheen	Grab sample
SW026	Drain 1	12/04/2024	4.11	158	7.22	-268.1	-63.1	20.6	Medium	Clear/Brown	No odour	No sheen	Grab sample
SW027	Drain 2	23/03/2021	-	-	-	-	-	-	-	-	-	-	
SW027	Drain 2	22/03/2022	4.070	153.000	7.870	-2.400	203	25.200	Low	Clear	No odour	Biosheen	Grab sample
SW027	Drain 2	15/03/2023	0.200	93.500	7.370	-12.400	193	23.400	Low	Clear	No odour	No sheen	Grab sample
SW027	Drain 2	12/04/2024	3.14	110.9	6.98	-283.9	-78.9	31.5	Clear	Brown	No odour	No sheen	Grab sample

Location ID	Location	Sample Date	DO (mg/L) *Field measure-ment*	EC (µS/cm) *Field measure-ment*	pH *Field measure-ment*	E_r (mV) *Field measure-ment*	E_h (mV)	Temp (°C) *Field measure-ment*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
SW028	Westbrook Creek	12/04/2024	5.48	836	7.86	-164.4	40.6	18.7	Medium	Brown	No odour	No sheen	Grab sample
SW032	Oakey Creek	15/04/2021	2.4	529.5	7.79	28.3	233.3	23.6	Medium	Clear	ht organic od	No sheen	Grab sample
SW032	Oakey Creek	13/04/2022	4.690	576.000	7.900	117.100	322	23.000	Clear	Brown	No odour	No sheen	Grab sample
SW032	Oakey Creek	-	Not collected due to unsafe access.										
SW032	Oakey Creek	8/04/2024	5.56	804	7.78	-30.4	-	24.8	Mdeium	Brown	No odour	No sheen	Grab sample
SW040	Oakey Creek	12/04/2021	3.68	247.2	7.02	48.4	253.4	22.1	Medium	Clear	No odour	No sheen	Grab sample
SW040	Oakey Creek	22/03/2022	4.490	709.000	7.860	2.600	208	25.200	Medium	Clear	No odour	No sheen	Grab sample
SW040	Oakey Creek	19/04/2023	4.520	293.300	7.940	97.700	303	20.200	High	Brown	No odour	No sheen	Grab sample
SW040	Oakey Creek	12/04/2024	5.41	187.7	7.4	-72.2	132.8	18.9	High	Brown	No odour	No sheen	Grab sample
SW043	Doctor Creek	12/04/2021	8.71	449.8	7.71	84.9	289.9	28.9	Turbid	Brown	No odour	No sheen	Grab sample
SW043	Doctor Creek	22/03/2022	6.740	444.200	7.950	2.700	208	29.000	Turbid	Clear	No odour	Biosheen	Grab sample
SW043	Doctor Creek	19/04/2023	4.330	409.100	7.680	92.600	298	20.400	High	Brown	No odour	No sheen	Grab sample
SW043	Doctor Creek	12/04/2024	4.07	175.8	7.33	-128.9	76.1	15.1	Medium	Brown	No odour	No sheen	Grab sample
SW056	Oakey Creek	15/04/2021	4.94	457	7.81	80.1	285.1	26.9	Medium	Clear	Light organic odour	No sheen	Grab sample
SW056	Oakey Creek	15/04/2022	4.140	516.000	8.580	100.400	305	19.700	Clear	Clear	No odour	No sheen	Grab sample
SW056	Oakey Creek	18/04/2023	4.390	305.700	7.680	80.800	286	22.300	High	Brown	No odour	No sheen	Grab sample
SW056	Oakey Creek	8/04/2024	3.44	1022	7.82	-19	186	25.7	Low	Brown	No odour	No sheen	Grab sample
SW057	Drain 3	13/04/2022	Grab sample. Field parameter data lost due to EDCA fault.										
SW057	Drain 3	18/04/2023	5.190	254.200	8.010	85.600	-	23.100	High	Brown	No odour	No sheen	Grab sample
SW057	Drain 3	10/04/2024	4.84	157.5	7.4	-77.7	127.3	22.7	Medium	Brown	No odour	No sheen	Grab sample
SW059	Oakey Creek	20/04/2021	6.54	1302	7.9	90.3	295.3	21.5	Clear	Clear	Light organic odour	No sheen	Grab sample
SW059	Oakey Creek	13/04/2022	8.550	1055.000	8.010	94.700	300	24.000	Clear	Clear	No odour	No sheen	Grab sample
SW059	Oakey Creek	-	Not collected due to unsafe access.										
SW059	Oakey Creek	8/04/2024	3.01	577	7.86	40.7	245.7	23.1	Medium	Brown	Organic odour	No sheen	Grab sample
SW063	Drain 3	23/03/2021	Grab samples. No quality parameter field measurements were collected as a functional water quality meter was not available.										
SW063	Drain 3	22/03/2022	-	-	-	-	-	-	Turbid	Clear	No odour	No sheen	Grab sample. Insufficient water for parameter measurements.
SW063	Drain 3	15/03/2023	0.500	152.600	7.720	80.200	-	30.100	High	Clear	No odour	No sheen	Grab sample
SW063	Drain 3	3/04/2024	-	-	-	-	-	-	-	-	-	-	Dry
SW065	Drain 1	23/03/2021	-	-	-	-	-	-	-	-	-	-	Grab sample
SW065	Drain 1	22/03/2022	1.000	231.300	7.940	-98.600	106	22.800	Medium	Clear	No odour	No sheen	Grab sample
SW065	Drain 1	-	-	-	-	-	-	-	-	-	-	-	Dry
SW065	Drain 1	5/04/2024	3.84	172.7	7.08	-52.3	152.7	26.4	Low	Brown	No odour	No sheen	Grab sample
SW066	Drain 1	23/03/2021	-	-	-	-	-	-	-	-	-	-	Grab sample
SW066	Drain 1	22/03/2022	3.480	176.100	7.280	-21.600	183	23.700	Low	Clear	No odour	No sheen	Grab sample
SW066	Drain 1	19/04/2023	3.790	159.100	6.740	86.900	292	27.200	High	Brown	No odour	No sheen	Grab sample
SW066	Drain 1	5/04/2024	1.14	156.3	6.71	-129.6	75.4	27.2	Low	Brown	No odour	No sheen	Grab sample
SW087	Westbrook Creek	16/04/2022	8.940	1016.000	8.320	96.800	302	21.100	Medium	Clear	No odour	No sheen	Grab sample
SW087	Westbrook Creek	15/04/2021	8.87	1127	9.18	87.5	292.5	21.7	Low	Clear	Light organic odour	No sheen	Grab sample
SW087	Westbrook Creek	15/03/2023	5.370	1044.000	8.210	62.800	268	23.700	Medium	Clear	No odour	No sheen	Grab sample

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems				*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water				**0.07**				**0.07**							**0.56**					
PFAS NEMP 2.0 2020 Recreational Water				2				2							10					
Location Code **Date** **Field ID** **Monitoring Round**																				
SW004	23 Mar 2020	0207_SW004_200323	OMP Apr 2020	<0.02	<0.02	<0.02	***0.02***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
SW004	13 Apr 2021	0207_SW004_210413	OMP Apr 2021	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW004	14 Apr 2022	0207_SW004_220414	OMP Apr 2022	<0.02	<0.02	<0.02	<0.02[#1]	-	<0.02	-	<0.02[#1]	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
SW004	15 Mar 2023	0207_SW004_230315	OMP Apr 2023	<0.02	<0.02	<0.02	<0.02[#1]	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW004	12 Apr 2024	0207_SW004_240412	OMP Apr 2024	<0.02	<0.02	<0.02	<0.02[#1]	-	<0.02	-	<0.02[#1]	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW009	13 Apr 2021	0207_SW009_210413	OMP Apr 2021	0.05	<0.02	<0.02	***0.63***	-	0.04	-	**0.27**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.02	0.04	<0.05	<0.02	<0.02	-
SW009	16 Apr 2022	0207_QC109_220418	OMP Apr 2022	0.03	<0.02	<0.02	***0.56***	-	0.02	-	**0.19**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW009	18 Apr 2022	0207_SW009_220418	OMP Apr 2022	0.03	<0.02	<0.02	***0.59***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
SW009	18 Apr 2022	0207_QC209_220418	OMP Apr 2022	0.029	<0.01	<0.01	***0.52***	-	0.023	<0.01	**0.18**	<0.05	<0.01	<0.01	<0.01	0.054	<0.01	<0.01	0.025	<0.02	<0.02	<0.01	<0.02
SW009	15 Mar 2023	0207_SW009_230315	OMP Apr 2023	0.04	<0.02	<0.02	***0.90***	-	0.02	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW009	12 Apr 2024	0207_SW009_240412	OMP Apr 2024	0.06	<0.02	<0.02	***0.46***	-	<0.02	-	**0.21**	<0.10	<0.02	<0.02	<0.02	0.05	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW010	13 Apr 2021	0207_SW010_210413	OMP Apr 2021	<0.02	<0.02	<0.02	***0.09***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW010	16 Apr 2022	0207_SW010_220416	OMP Apr 2022	<0.02	<0.02	<0.02	***0.02***	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW010	15 Mar 2023	0207_SW010_230315	OMP Apr 2023	<0.02	<0.02	<0.02	***0.09***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
SW010	12 Apr 2024	0207_SW010_240412	OMP Apr 2024	<0.02	<0.02	<0.02	***0.05***	-	<0.02	-	<0.02[#1]	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW011	23 Mar 2020	0207_SW011_200323	OMP Apr 2020	<0.02	<0.02	<0.02	***0.05***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW011	13 Apr 2021	0207_SW011_210413	OMP Apr 2021	0.04	<0.02	<0.02	***0.32***	-	0.03	-	**0.15**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
SW011	15 Apr 2022	0207_SW011_220415	OMP Apr 2022	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW011	15 Mar 2023	0207_SW011_230315	OMP Apr 2023	<0.02	<0.02	<0.02	***0.12***	-	<0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW011	12 Apr 2024	0207_SW011_240412	OMP Apr 2024	<0.02	<0.02	<0.02	*0.04*	-	<0.02	-	<0.02[#1]	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW012	23 Mar 2020	0207_QC113_200323	OMP Apr 2020	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW012	23 Mar 2020	0207_SW012_200323	OMP Apr 2020	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW012	23 Mar 2020	0207_QC213_200323	OMP Apr 2020	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
SW012	13 Apr 2021	0207_SW012_210413	OMP Apr 2021	0.05	<0.02	<0.02	***0.57***	-	0.03	-	**0.21**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.02	0.04	<0.05	<0.02	<0.02	-
SW012	15 Apr 2022	0207_SW012_220415	OMP Apr 2022	<0.02	<0.02	<0.02	<0.02[#1]	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW012	15 Mar 2023	0207_SW012_230315	OMP Apr 2023	<0.05[#1]	<0.05[#1]	<0.05[#1]	***0.12***	-	<0.05[#1]	-	<0.05[#1]	<0.2[#1]	<0.05[#1]	<0.05[#1]	<0.05[#1]	<0.05[#1]	<0.05[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
SW012	12 Apr 2024	0207_SW012_240412	OMP Apr 2024	<0.02	<0.02	<0.02	***0.06***	-	<0.02	-	<0.02[#1]	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW013	23 Mar 2020	0207_SW013_200323	OMP Apr 2020	<0.02	<0.02	<0.02	***0.45***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW013	13 Apr 2021	0207_QC143_210413	OMP Apr 2021	0.04	<0.02	<0.02	***0.55***	-	0.03	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
SW013	13 Apr 2021	0207_QC243_210413	OMP Apr 2021	0.049	<0.01	0.011	***0.53***	-	0.029	<0.01	**0.18**	<0.05	<0.01	<0.01	<0.01	0.063	<0.01	0.016	0.031	<0.02	<0.02	<0.01	<0.02
SW013	13 Apr 2021	0207_SW013_210413	OMP Apr 2021	0.04	<0.02	<0.02	***0.56***	-	0.03	-	**0.18**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
SW013	16 Apr 2022	0207_SW013_220416	OMP Apr 2022	<0.02	<0.02	<0.02	*0.04*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW013	15 Mar 2023	0207_QC100_230315	OMP Apr 2023	0.04	<0.02	<0.02	***0.50***	-	0.02	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW013	15 Mar 2023	0207_QC200_230315	OMP Apr 2023	0.038	<0.01	<0.01	***0.48***	-	0.023	<0.01	**0.15**	<0.05	<0.01	<0.01	<0.01	0.058	<0.01	0.011	<0.02	<0.02	<0.02	<0.01	<0.02
SW013	15 Mar 2023	0207_SW013_230315	OMP Apr 2023	0.04	<0.02	<0.02	***0.60***	-	<0.02	-	**0.19**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW013	12 Apr 2024	0207_SW013_240412	OMP Apr 2024	0.02	<0.02	<0.02	***0.30***	-	<0.02	-	**0.08**	<0.10	<0.02	<0.02	<0.02	0.02	<0.02	<0.02[#3]	<0.02	<0.05	<0.02	<0.02	-
SW024	25 Feb 2020	0207_SW024_200225	OMP Apr 2020	0.22	<0.02	0.05	***1.01***	-	0.20	-	**1.19**	<0.10	<0.02	<0.02	0.05	0.44	<0.02	0.08	0.10	<0.05	<0.02	<0.02	-
SW024	06 Apr 2020	0207_QC101_200406	OMP Apr 2020	<0.02	<0.02	<0.02	***0.36***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids												
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems							*0.00023*											*19*						
PFAS NEMP 2.0 2020 Health Drinking Water							**0.07**				**0.07**							**0.56**						
PFAS NEMP 2.0 2020 Recreational Water							2				2							10						
Location Code	**Date**	**Field ID**	**Monitoring Round**																					
SW024	06 Apr 2020	0207_SW024_200406	OMP Apr 2020	<0.02	<0.02	<0.02	***0.34***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW024	06 Apr 2020	0207_QC201_200408	OMP Apr 2020	<0.01	<0.01	<0.01	***0.26*** [#2]	<0.01	<0.01	<0.01	0.03 [#2]	<0.05	<0.01	<0.01	<0.01	<0.01	0.01 [#2]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
SW024	23 Mar 2021	0207_SW024_210323	OMP Apr 2021	0.37	<0.02	0.08	***1.06***	-	0.32	-	**2.12**	0.3	<0.02	<0.02	0.03	0.68	<0.02	0.03	0.35	<0.05	<0.02	<0.02	-
SW024	07 Feb 2022	0207_QC100_220207	OMR Feb 2022	0.05	<0.02	0.04	***1.97***	-	0.06	-	**0.36**	<0.1	<0.02	<0.02	0.02	0.11	<0.02	0.07	<0.06 [#1]	<0.05	<0.02	<0.02	-
SW024	07 Feb 2022	0207_QC200_220207	OMR Feb 2022	0.04	<0.01	0.03 [#2]	***1.7*** [#2]	0.01	0.04	<0.01	**0.29** [#2]	<0.05	<0.01	<0.01	0.02	0.10	<0.01	0.05 [#2]	<0.01	<0.01	<0.01	<0.01	-
SW024	07 Feb 2022	0207_SW024_220207	OMR Feb 2022	0.04	<0.02	0.03	***1.45***	-	0.05	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.05	<0.04 [#1]	<0.05	<0.02	<0.02	-
SW024	18 Mar 2022	0207_SW024_220318	OMP Apr 2022	0.03	<0.02	0.02	***1.30***	-	0.02	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW024	15 Mar 2023	0207_QC202_230315	OMP Apr 2023	0.018	<0.01	0.03	***1.7***	-	0.026	<0.01	**0.27**	<0.05	<0.01	<0.01	0.012	0.046	<0.01	0.045	<0.02	<0.02	<0.02	<0.01	<0.02
SW024	15 Mar 2023	0207_SW024_230315	OMP Apr 2023	<0.04 [#1]	<0.02	0.04	***2.87***	-	0.03	-	**0.36**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	-
SW024	15 Mar 2023	0207_QC102_230315	OMP Apr 2023	<0.02	<0.02	0.04	***2.69***	-	0.02	-	**0.29**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.05	<0.02	<0.02	-
SW024	19 Mar 2024	0207_QC202_240319	OMP Apr 2024	0.008 [#2]	<0.001	0.007 [#2]	***0.31*** [#2]	0.002	0.011 [#2]	0.002 [#2]	0.069 [#2]	0.009	<0.001	<0.001	0.005 [#2]	0.017	<0.001	0.009 [#2]	0.006	<0.001	<0.001	<0.001	-
SW024	19 Mar 2024	0207_QC102_240319	OMP Apr 2024	<0.02	<0.02	<0.02	***0.33***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW024	19 Mar 2024	0207_SW024_240319	OMP Apr 2024	<0.02	<0.02	<0.02	***0.32***	-	<0.02	-	0.07	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW024	03 Apr 2024	0207_QC113_240403	OMP Apr 2024	<0.02	<0.02	<0.02	***0.56***	-	<0.02	-	0.06	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02 [#1]	<0.02	<0.05	<0.02	<0.02	-
SW024	03 Apr 2024	0207_SW024_240403	OMP Apr 2024	<0.02	<0.02	<0.02	***0.55***	-	<0.02	-	0.05	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02 [#1]	<0.02	<0.05	<0.02	<0.02	-
SW024	03 Apr 2024	0207_QC213_240403	OMP Apr 2024	<0.01	<0.01	<0.01	***0.52***	-	<0.01	<0.01	0.065	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
SW025	25 Feb 2020	0207_SW025_200225	OMP Apr 2020	0.07	<0.02	0.03	***1.16***	-	0.06	-	**0.43**	<0.1	<0.02	<0.02	0.02	0.15	<0.02	0.05	0.04	<0.05	<0.02	<0.02	-
SW025	06 Apr 2020	0207_SW025_200406	OMP Apr 2020	0.02	<0.02	0.03	***1.70***	-	<0.02	-	**0.17**	<0.1	<0.02	<0.02	0.03	0.06	<0.02	0.04	0.03	<0.05	<0.02	<0.02	-
SW025	23 Mar 2021	0207_SW025_210323	OMP Apr 2021	0.04	<0.02	<0.02	***0.36***	-	0.04	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	11 Oct 2021	0207_SW025_2110112100	OMP Oct 2021	0.10	<0.02	0.02	***0.88***	-	0.06	-	**0.4**	<0.1	<0.02	<0.02	<0.02	0.14	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_QC203_211014	OMP Oct 2021	0.012	<0.01	<0.01	***0.36***	-	<0.01	<0.01	0.059	<0.05	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
SW025	14 Oct 2021	0207_SW025_2110140940	OMP Oct 2021	<0.02	<0.02	<0.02	***0.26***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141010	OMP Oct 2021	<0.02	<0.02	<0.02	***0.28***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141040	OMP Oct 2021	<0.02	<0.02	<0.02	***0.30***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141110	OMP Oct 2021	<0.02	<0.02	<0.02	***0.29***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141140	OMP Oct 2021	<0.02	<0.02	<0.02	***0.32***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141210	OMP Oct 2021	<0.02	<0.02	<0.02	***0.30***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141240	OMP Oct 2021	<0.02	<0.02	<0.02	***0.34***	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141310	OMP Oct 2021	<0.02	<0.02	<0.02	***0.45***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141340	OMP Oct 2021	<0.02	<0.02	<0.02	***0.41***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	14 Oct 2021	0207_SW025_2110141440	OMP Oct 2021	<0.02	<0.02	<0.02	***0.41***	-	<0.02	-	0.07	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW025	07 Feb 2022	0207_SW025_220207	OMR Feb 2022	0.02	<0.02	<0.02	***0.40***	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.04 [#1]	<0.05	<0.02	<0.02	-
SW025	18 Mar 2022	0207_SW025_220318	OMP Apr 2022	0.05	<0.02	<0.02	***0.59***	-	<0.02	-	**0.19**	<0.10	<0.02	<0.02	<0.02	0.06	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW025	15 Mar 2023	0207_SW025_230315	OMP Apr 2023	0.05	<0.02	<0.02	***0.51***	-	0.03	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW025	19 Mar 2024	0207_SW025_240319	OMP Apr 2024	0.02	<0.02	<0.02	***0.48***	-	<0.02	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW025	12 Apr 2024	0207_SW025_240412	OMP Apr 2024	<0.02	<0.02	<0.02	***0.32***	-	<0.02	-	**0.08**	<0.10	<0.02	<0.02	<0.02	0.04	<0.02	<0.02 [#1]	<0.02	<0.05	<0.02	<0.02	-
SW026	25 Feb 2020	0207_SW026_200225	OMP Apr 2020	0.03	<0.02	<0.02	***0.31***	-	0.02	-	**0.19**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
SW026	23 Mar 2021	0207_SW026_210323	OMP Apr 2021	0.08	<0.02	0.02	***0.76***	-	0.05	-	**0.31**	<0.1	<0.02	<0.02	<0.02	0.13	<0.02	0.03	0.05	<0.05	<0.02	<0.02	-
SW026	18 Mar 2022	0207_SW026_220318	OMP Apr 2022	0.06	<0.02	<0.02	***0.46***	-	0.03	-	**0.2**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-

Appendix B
Table 4
Historical Surface Water Analytical Results

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids												
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems							*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water							**0.07**				**0.07**							**0.56**					
PFAS NEMP 2.0 2020 Recreational Water							2				2							10					
Location Code	**Date**	**Field ID**	**Monitoring Round**																				
SW026	15 Mar 2023	0207_SW026_230315	OMP Apr 2023	<0.04[#1]	<0.02	<0.02	***0.94***	-	<0.02	-	**0.22**	<0.1	<0.02	<0.02	<0.02	<0.04[#1]	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
SW026	12 Apr 2024	0207_SW026_240412	OMP Apr 2024	0.07	<0.02	<0.02	***0.57***	-	0.02	-	**0.26**	<0.10	<0.02	<0.02	<0.02	0.05	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW027	25 Feb 2020	0207_SW027_200225	OMP Apr 2020	0.05	<0.02	0.04	***1.46***	-	0.05	-	**0.38**	<0.1	<0.02	<0.02	<0.02	0.13	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
SW027	23 Mar 2021	0207_SW027_210323	OMP Apr 2021	<0.02	<0.02	<0.02	***0.40***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW027	18 Mar 2022	0207_SW027_220318	OMP Apr 2022	<0.02	<0.02	<0.02	***0.70***	-	<0.02	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW027	15 Mar 2023	0207_SW027_230315	OMP Apr 2023	<0.02	<0.02	<0.02	***0.47***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
SW027	12 Apr 2024	0207_SW027_240412	OMP Apr 2024	<0.02	<0.02	<0.02	***0.34***	-	<0.02	-	**0.09**	<0.10	<0.02	<0.02	<0.02	0.03	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW028	23 Mar 2020	0207_SW028_200323	OMP Apr 2020	<0.02	<0.02	<0.02	***0.01***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
SW028	15 Apr 2021	0207_SW028_210415	OMP Apr 2021	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.03[#1]	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW028	15 Mar 2023	0207_SW028_230315	OMP Apr 2023	<0.02	<0.02	<0.02	<0.02[#1]	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW028	12 Apr 2024	0207_SW028_240412	OMP Apr 2024	<0.02	<0.02	<0.02	<0.02[#1]	-	<0.02	-	<0.02[#1]	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW032	24 Mar 2020	0207_SW032_200324	OMP Apr 2020	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.03[#1]	<0.05	<0.02	<0.02	-
SW032	15 Apr 2021	0207_SW032_210415	OMP Apr 2021	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW032	13 Apr 2022	0207_SW032_220413	OMP Apr 2022	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW032	08 Apr 2024	0207_SW032_240408	OMP Apr 2024	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.10	<0.02	<0.09[#1]	<0.02	<0.02	<0.02	<0.01	<0.02	0.12	0.10	<0.09[#1]	-
SW040	23 Mar 2020	0207_QC111_200323	OMP Apr 2020	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW040	23 Mar 2020	0207_SW040_200323	OMP Apr 2020	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW040	23 Mar 2020	0207_QC211_200323	OMP Apr 2020	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
SW040	12 Apr 2021	0207_QC140_210412	OMP Apr 2021	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW040	12 Apr 2021	0207_SW040_210412	OMP Apr 2021	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW040	12 Apr 2021	0207_QC240_210412	OMP Apr 2021	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	0.017	<0.05	<0.01	<0.01	0.011	0.012	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
SW040	18 Mar 2022	0207_SW040_220318	OMP Apr 2022	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW040	19 Apr 2023	0207_SW040_230419	OMP Apr 2023	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW040	12 Apr 2024	0207_SW040_240412	OMP Apr 2024	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW043	23 Mar 2020	0207_SW043_200323	OMP Apr 2020	<0.02	<0.02	<0.02	***0.01***	-	<0.02	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW043	12 Apr 2021	0207_QC138_210412	OMP Apr 2021	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW043	12 Apr 2021	0207_SW043_210412	OMP Apr 2021	<0.02	<0.02	<0.02	***0.01***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW043	12 Apr 2021	0207_QC238_210412	OMP Apr 2021	<0.01	<0.01	<0.01	<0.02	-	<0.01	<0.01	0.014	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
SW043	18 Mar 2022	0207_SW043_220318	OMP Apr 2022	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW043	19 Apr 2023	0207_SW043_230419	OMP Apr 2023	0.03	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW043	12 Apr 2024	0207_SW043_240412	OMP Apr 2024	<0.02	<0.02	<0.02	<0.02[#1]	-	<0.02	-	<0.02[#1]	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.05	<0.02	<0.02	-
SW056	24 Mar 2020	0207_SW056_200324	OMP Apr 2020	<0.02	<0.02	<0.02	***0.04***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.05[#1]	<0.05	<0.02	<0.02	-
SW056	15 Apr 2021	0207_SW056_210415	OMP Apr 2021	<0.02	<0.02	<0.02	***0.02***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW056	15 Apr 2022	0207_SW056_220415	OMP Apr 2022	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW056	18 Apr 2023	0207_QC110_230418	OMP Apr 2023	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW056	18 Apr 2023	0207_SW056_230418	OMP Apr 2023	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW056	18 Apr 2023	0207_QC210_230418	OMP Apr 2023	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
SW056	08 Apr 2024	0207_SW056_240408	OMP Apr 2024	<0.02	<0.02	<0.02	***0.04***	-	<0.02	-	0.02	<0.10	<0.02	<0.07[#1]	<0.02	<0.02	<0.02	<0.01	<0.02	0.10	0.08	<0.07[#1]	-

Appendix B
Table 4
Historical Surface Water Analytical Results

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids												
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems							*0.00023*											*19*						
PFAS NEMP 2.0 2020 Health Drinking Water							**0.07**				**0.07**							**0.56**						
PFAS NEMP 2.0 2020 Recreational Water							2				2							10						
Location Code	**Date**	**Field ID**	**Monitoring Round**																					
SW057	24 Mar 2020	0207_SW057_200324	OMP Apr 2020	0.04	<0.02	<0.02	***0.17***	-	<0.02	-	**0.09**	0.19	0.08	0.04	0.06	0.10	0.03	0.04	0.19	<0.05	<0.02	0.07	-
SW057	13 Apr 2022	0207_SW057_220413	OMP Apr 2022	<0.02	<0.02	<0.02	***0.55***	-	<0.02	-	**0.1**	<0.1	0.03	<0.02	0.02	0.04	0.03	0.04	0.04	<0.05	<0.02	<0.02	-
SW057	18 Apr 2023	0207_SW057_230418	OMP Apr 2023	0.02	<0.02	<0.02	***0.58***	-	<0.02	-	**0.11**	<0.1	0.03	<0.02	0.02	0.05	0.04	0.04	0.07	<0.05	<0.02	<0.02	-
SW057	08 Apr 2024	0207_SW057_240410	OMP Apr 2024	<0.02	<0.02	<0.02	***0.50***	-	<0.02	-	**0.17**	<0.10	0.03	<0.02	0.09	0.14	0.06	0.10	0.10	<0.05	<0.02	<0.02	-
SW059	24 Mar 2020	0207_SW059_200324	OMP Apr 2020	<0.02	<0.02	<0.02	*0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.04[#1]	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW059	20 Apr 2021	0207_SW059_210420	OMP Apr 2021	<0.02	<0.02	<0.02	*0.03*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW059	13 Apr 2022	0207_SW059_220413	OMP Apr 2022	<0.02	<0.02	<0.02	*0.02*	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW059	08 Apr 2024	0207_SW059_240408	OMP Apr 2024	<0.02	<0.02	<0.02	<0.01	-	<0.02	-	<0.01	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
SW065	25 Feb 2020	0207_SW065_200225	OMP Apr 2020	0.62	<0.02	0.13	***1.47***	-	0.60	-	**4.29**	<0.10	<0.02	<0.02	0.14	1.04	<0.02	0.19	0.24	<0.05	<0.02	<0.02	-
SW065	23 Mar 2021	0207_SW065_210323	OMP Apr 2021	0.10	<0.02	<0.02	***0.31***	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW065	18 Mar 2022	0207_SW065_220318	OMP Apr 2022	0.08	<0.02	<0.02	***0.71***	-	0.04	-	**0.3**	<0.10	<0.02	<0.02	<0.02	0.09	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
SW065	05 Apr 2024	0207_QC111_240405	OMP Apr 2024	0.07	<0.02	<0.02	***0.41***	-	<0.02	-	**0.16**	<0.10	<0.02	<0.02	<0.02	0.03	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW065	05 Apr 2024	0207_SW065_240405	OMP Apr 2024	0.06	<0.02	<0.02	***0.43***	-	<0.02	-	**0.18**	<0.10	<0.02	<0.02	<0.02	0.04	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
SW065	05 Apr 2024	0207_QC211_240405	OMP Apr 2024	0.058	<0.01	<0.01	***0.4***	-	0.031	<0.01	**0.17**	<0.05	<0.01	<0.01	<0.01	0.032	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
SW066	25 Feb 2020	0207_SW066_200225	OMP Apr 2020	0.05	<0.02	<0.02	***0.31***	-	0.04	-	**0.26**	<0.10	<0.02	<0.02	<0.02	0.09	<0.02	0.02	0.07	<0.05	<0.02	<0.02	-
SW066	23 Mar 2021	0207_SW066_210323	OMP Apr 2021	0.07	<0.02	0.02	***0.96***	-	0.06	-	**0.32**	<0.1	<0.02	<0.02	0.02	0.13	<0.02	0.04	0.04	<0.05	<0.02	<0.02	-
SW066	07 Feb 2022	0207_SW066_220207	OMR Feb 2022	0.10	<0.02	0.04	***0.59***	-	0.10	-	**0.94**	<0.1	<0.02	<0.02	0.03	0.18	<0.02	0.08	<0.12[#1]	<0.05	<0.02	<0.02	-
SW066	18 Mar 2022	0207_SW066_220318	OMP Apr 2022	0.04	<0.02	<0.02	***0.49***	-	0.03	-	**0.23**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
SW066	19 Apr 2023	0207_SW066_230419	OMP Apr 2023	0.11	<0.02	0.02	***0.69***	-	0.06	-	**0.34**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.02	0.04	<0.05	<0.02	<0.02	-
SW066	19 Mar 2024	0207_SW066_240319	OMP Apr 2024	0.11	<0.02	0.04	***1.07***	-	0.09	-	**0.77**	0.1	<0.02	<0.02	0.05	0.27	<0.02	0.10	0.11	<0.05	<0.02	<0.02	-
SW066	05 Apr 2024	0207_SW066_240405	OMP Apr 2024	0.06	<0.02	<0.02	***0.80***	-	0.03	-	**0.35**	<0.10	<0.02	<0.02	0.03	0.07	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
SW066	05 Apr 2024	0207_QC212_240405	OMP Apr 2024	0.059	<0.01	0.016	***0.38***	-	0.048	<0.01	**0.39**	<0.05	<0.01	<0.01	0.013	0.072	<0.01	0.025	0.041	<0.02	<0.02	<0.01	<0.02
SW066	05 Apr 2024	0207_QC112_240405	OMP Apr 2024	0.05	<0.02	<0.02	***0.79***	-	0.03	-	**0.38**	<0.10	<0.02	<0.02	0.02	0.06	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-

Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR
#2 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

Locations where new maximums were recorded
Locations where new minimums were recorded

Environmental Standards

HEPA, January 2020, PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems
HEPA, Jan 2020, PFAS NEMP 2.0 2020 Health Drinking Water
HEPA, Jan 2020, PFAS NEMP 2.0 2020 Recreational Water

Appendix B
Table 4
Historical Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums					PFAS	
	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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.005	0.001	0.001	0.005	0.005	0.001	0.001	0.001	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																		
PFAS NEMP 2.0 2020 Health Drinking Water															**0.07**			
PFAS NEMP 2.0 2020 Recreational Water															2			
Location Code **Date** **Field ID** **Monitoring Round**																		
SW004 23 Mar 2020 0207_SW004_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	0.06	-	0.02	-	-	-
SW004 13 Apr 2021 0207_SW004_210413 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW004 14 Apr 2022 0207_SW004_220414 OMP Apr 2022	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02[#1]	<0.02[#1]	-	<0.02[#1]	-	-	-
SW004 15 Mar 2023 0207_SW004_230315 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW004 12 Apr 2024 0207_SW004_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02[#1]	<0.02[#1]	-	<0.02[#1]	-	-	-
SW009 13 Apr 2021 0207_SW009_210413 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.13	1.09	-	**0.9**	-	-	-
SW009 16 Apr 2022 0207_QC109_220418 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.88	0.86	-	**0.75**	-	-	-
SW009 18 Apr 2022 0207_SW009_220418 OMP Apr 2022	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	0.85	-	**0.77**	-	-	-
SW009 18 Apr 2022 0207_QC209_220418 OMP Apr 2022	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW009 15 Mar 2023 0207_SW009_230315 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.27	1.25	-	**1.14**	-	-	-
SW009 12 Apr 2024 0207_SW009_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.82	0.78	-	**0.67**	-	-	-
SW010 13 Apr 2021 0207_SW010_210413 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	0.15	-	**0.14**	-	-	-
SW010 16 Apr 2022 0207_SW010_220416 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	0.02	-	-	-
SW010 15 Mar 2023 0207_SW010_230315 OMP Apr 2023	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	0.13	-	**0.13**	-	-	-
SW010 12 Apr 2024 0207_SW010_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	0.05	-	-	-
SW011 23 Mar 2020 0207_SW011_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	0.05	-	-	-
SW011 13 Apr 2021 0207_SW011_210413 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.65	0.62	-	**0.47**	-	-	-
SW011 15 Apr 2022 0207_SW011_220415 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW011 15 Mar 2023 0207_SW011_230315 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	0.23	-	**0.23**	-	-	-
SW011 12 Apr 2024 0207_SW011_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	0.04	-	-	-
SW012 23 Mar 2020 0207_QC113_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW012 23 Mar 2020 0207_SW012_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW012 23 Mar 2020 0207_QC213_200323 OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW012 13 Apr 2021 0207_SW012_210413 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.00	0.97	-	**0.78**	-	-	-
SW012 15 Apr 2022 0207_SW012_220415 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW012 15 Mar 2023 0207_SW012_230315 OMP Apr 2023	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	**0.12**	-	-	-
SW012 12 Apr 2024 0207_SW012_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	0.06	-	0.06	-	-	-
SW013 23 Mar 2020 0207_SW013_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.49	0.49	-	**0.49**	-	-	-
SW013 13 Apr 2021 0207_QC143_210413 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	0.88	-	**0.72**	-	-	-
SW013 13 Apr 2021 0207_QC243_210413 OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW013 13 Apr 2021 0207_SW013_210413 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.93	0.90	-	**0.74**	-	-	-
SW013 16 Apr 2022 0207_SW013_220416 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	0.04	-	-	-
SW013 15 Mar 2023 0207_QC100_230315 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.79	0.77	-	**0.67**	-	-	-
SW013 15 Mar 2023 0207_QC200_230315 OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW013 15 Mar 2023 0207_SW013_230315 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.92	0.92	-	**0.79**	-	-	-
SW013 12 Apr 2024 0207_SW013_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.42	0.42	-	**0.38**	-	-	-
SW024 25 Feb 2020 0207_SW024_200225 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.34	3.09	-	**2.20**	-	-	-
SW024 06 Apr 2020 0207_QC101_200406 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.07	<0.05	0.47	0.47	-	**0.39**	-	-	-

Appendix B
Table 4
Historical Surface Water Analytical Results

				PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums					PFAS	
				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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.005	0.001	0.001	0.005	0.005	0.001	0.001	0.001	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																					
PFAS NEMP 2.0 2020 Health Drinking Water																		**0.07**			
PFAS NEMP 2.0 2020 Recreational Water																		2			
Location Code	**Date**	**Field ID**	**Monitoring Round**																		
SW024	06 Apr 2020	0207_SW024_200406	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	0.44	0.44	-	**0.37**	-	-	-
SW024	06 Apr 2020	0207_QC201_200408	OMP Apr 2020	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	0.03	<0.01	0.33	0.33	0.26	**0.29**	0.29	-	-
SW024	23 Mar 2021	0207_SW024_210323	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.34	4.94	-	**3.18**	-	-	-
SW024	07 Feb 2022	0207_QC100_220207	OMR Feb 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.68	2.58	-	**2.33**	-	-	-
SW024	07 Feb 2022	0207_QC200_220207	OMR Feb 2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	2.28	2.2	1.75	**1.99**	2.04	-	-
SW024	07 Feb 2022	0207_SW024_220207	OMR Feb 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.96	1.88	-	**1.71**	-	-	-
SW024	18 Mar 2022	0207_SW024_220318	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.67	1.63	-	**1.52**	-	-	-
SW024	15 Mar 2023	0207_QC202_230315	OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW024	15 Mar 2023	0207_SW024_230315	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.40	3.33	-	**3.23**	-	-	-
SW024	15 Mar 2023	0207_QC102_230315	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.14	3.08	-	**2.98**	-	-	-
SW024	19 Mar 2024	0207_QC202_240319	OMP Apr 2024	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.005	<0.001	<0.001	0.455	0.433	0.319	**0.379**	0.388	-	-
SW024	19 Mar 2024	0207_QC102_240319	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.44	0.44	-	**0.41**	-	-	-
SW024	19 Mar 2024	0207_SW024_240319	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.42	0.42	-	**0.39**	-	-	-
SW024	03 Apr 2024	0207_QC113_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.62	0.62	-	**0.62**	-	-	-
SW024	03 Apr 2024	0207_SW024_240403	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.60	0.60	-	**0.60**	-	-	-
SW024	03 Apr 2024	0207_QC213_240403	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW025	25 Feb 2020	0207_SW025_200225	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.01	1.92	-	**1.59**	-	-	-
SW025	06 Apr 2020	0207_SW025_200406	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.08	2.05	-	**1.87**	-	-	-
SW025	23 Mar 2021	0207_SW025_210323	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.76	0.72	-	**0.60**	-	-	-
SW025	11 Oct 2021	0207_SW025_2110112100	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.63	1.55	-	**1.28**	-	-	-
SW025	14 Oct 2021	0207_QC203_211014	OMP Oct 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW025	14 Oct 2021	0207_SW025_2110140940	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.30	0.30	-	**0.30**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141010	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.33	0.33	-	**0.33**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141040	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.35	0.35	-	**0.35**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141110	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.34	0.34	-	**0.34**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141140	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.37	0.37	-	**0.37**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141210	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.35	0.35	-	**0.35**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141240	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.39	0.39	-	**0.39**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141310	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.53	0.53	-	**0.51**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141340	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.49	0.49	-	**0.47**	-	-	-
SW025	14 Oct 2021	0207_SW025_2110141440	OMP Oct 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.50	0.50	-	**0.48**	-	-	-
SW025	07 Feb 2022	0207_SW025_220207	OMR Feb 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.53	0.53	-	**0.49**	-	-	-
SW025	18 Mar 2022	0207_SW025_220318	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	0.91	-	**0.78**	-	-	-
SW025	15 Mar 2023	0207_SW025_230315	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.92	0.89	-	**0.77**	-	-	-
SW025	19 Mar 2024	0207_SW025_240319	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.74	0.74	-	**0.65**	-	-	-
SW025	12 Apr 2024	0207_SW025_240412	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.44	0.44	-	**0.40**	-	-	-
SW026	25 Feb 2020	0207_SW026_200225	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.66	0.64	-	**0.50**	-	-	-
SW026	23 Mar 2021	0207_SW026_210323	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.43	1.36	-	**1.07**	-	-	-
SW026	18 Mar 2022	0207_SW026_220318	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.84	0.81	-	**0.66**	-	-	-

Appendix B
Table 4
Historical Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums					PFAS	
	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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.005	0.001	0.001	0.005	0.005	0.001	0.001	0.001	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																		
PFAS NEMP 2.0 2020 Health Drinking Water															**0.07**			
PFAS NEMP 2.0 2020 Recreational Water															2			
Location Code **Date** **Field ID** **Monitoring Round**																		
SW026 15 Mar 2023 0207_SW026_230315 OMP Apr 2023	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	1.16	1.16	-	**1.16**	-	-	-
SW026 12 Apr 2024 0207_SW026_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.03	0.95	-	**0.83**	-	-	-
SW027 25 Feb 2020 0207_SW027_200225 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.15	2.06	-	**1.84**	-	-	-
SW027 23 Mar 2021 0207_SW027_210323 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.51	0.51	-	**0.48**	-	-	-
SW027 18 Mar 2022 0207_SW027_220318 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.94	0.94	-	**0.87**	-	-	-
SW027 15 Mar 2023 0207_SW027_230315 OMP Apr 2023	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	0.61	0.61	-	**0.61**	-	-	-
SW027 12 Apr 2024 0207_SW027_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.46	0.46	-	**0.43**	-	-	-
SW028 23 Mar 2020 0207_SW028_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	0.01	-	-	-
SW028 15 Apr 2021 0207_SW028_210415 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW028 15 Mar 2023 0207_SW028_230315 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW028 12 Apr 2024 0207_SW028_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02[#1]	<0.02[#1]	-	<0.02[#1]	-	-	-
SW032 24 Mar 2020 0207_SW032_200324 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW032 15 Apr 2021 0207_SW032_210415 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW032 13 Apr 2022 0207_SW032_220413 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW032 08 Apr 2024 0207_SW032_240408 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	<0.01	-	<0.01	-	-	-
SW040 23 Mar 2020 0207_QC111_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW040 23 Mar 2020 0207_SW040_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW040 23 Mar 2020 0207_QC211_200323 OMP Apr 2020	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW040 12 Apr 2021 0207_QC140_210412 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW040 12 Apr 2021 0207_SW040_210412 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW040 12 Apr 2021 0207_QC240_210412 OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW040 18 Mar 2022 0207_SW040_220318 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW040 19 Apr 2023 0207_SW040_230419 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW040 12 Apr 2024 0207_SW040_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW043 23 Mar 2020 0207_SW043_200323 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	0.01	-	-	-
SW043 12 Apr 2021 0207_QC138_210412 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW043 12 Apr 2021 0207_SW043_210412 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	0.01	-	-	-
SW043 12 Apr 2021 0207_QC238_210412 OMP Apr 2021	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW043 18 Mar 2022 0207_SW043_220318 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW043 19 Apr 2023 0207_SW043_230419 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	<0.01	-	-	-
SW043 12 Apr 2024 0207_SW043_240412 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02[#1]	<0.02[#1]	-	<0.02[#1]	-	-	-
SW056 24 Mar 2020 0207_SW056_200324 OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	0.04	-	-	-
SW056 15 Apr 2021 0207_SW056_210415 OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	0.02	-	-	-
SW056 15 Apr 2022 0207_SW056_220415 OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW056 18 Apr 2023 0207_QC110_230418 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW056 18 Apr 2023 0207_SW056_230418 OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW056 18 Apr 2023 0207_QC210_230418 OMP Apr 2023	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW056 08 Apr 2024 0207_SW056_240408 OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.06	-	0.06	-	-	-

Appendix B
Table 4
Historical Surface Water Analytical Results

				PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums					PFAS	
				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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.001	0.005	0.001	0.001	0.005	0.005	0.001	0.001	0.001	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																					
PFAS NEMP 2.0 2020 Health Drinking Water																		**0.07**			
PFAS NEMP 2.0 2020 Recreational Water																		2			
Location Code	**Date**	**Field ID**	**Monitoring Round**																		
SW057	24 Mar 2020	0207_SW057_200324	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.10	0.88	-	**0.26**	-	-	-
SW057	13 Apr 2022	0207_SW057_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	0.79	-	**0.65**	-	-	-
SW057	18 Apr 2023	0207_SW057_230418	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.96	0.89	-	**0.69**	-	-	-
SW057	08 Apr 2024	0207_SW057_240410	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	1.10	-	**0.67**	-	-	-
SW059	24 Mar 2020	0207_SW059_200324	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	0.01	-	-	-
SW059	20 Apr 2021	0207_SW059_210420	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	0.03	-	-	-
SW059	13 Apr 2022	0207_SW059_220413	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	0.03	-	-	-
SW059	08 Apr 2024	0207_SW059_240408	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-	-	-
SW065	25 Feb 2020	0207_SW065_200225	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.72	7.99	-	**5.76**	-	-	-
SW065	23 Mar 2021	0207_SW065_210323	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.76	0.72	-	**0.53**	-	-	-
SW065	18 Mar 2022	0207_SW065_220318	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	1.21	-	**1.01**	-	-	-
SW065	05 Apr 2024	0207_QC111_240405	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.76	0.68	-	**0.57**	-	-	-
SW065	05 Apr 2024	0207_SW065_240405	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	0.72	-	**0.61**	-	-	-
SW065	05 Apr 2024	0207_QC211_240405	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW066	25 Feb 2020	0207_SW066_200225	OMP Apr 2020	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.84	0.80	-	**0.57**	-	-	-
SW066	23 Mar 2021	0207_SW066_210323	OMP Apr 2021	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.66	1.58	-	**1.28**	-	-	-
SW066	07 Feb 2022	0207_SW066_220207	OMR Feb 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.06	1.92	-	**1.53**	-	-	-
SW066	18 Mar 2022	0207_SW066_220318	OMP Apr 2022	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.88	0.85	-	**0.72**	-	-	-
SW066	19 Apr 2023	0207_SW066_230419	OMP Apr 2023	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.36	1.28	-	**1.03**	-	-	-
SW066	19 Mar 2024	0207_SW066_240319	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.71	2.58	-	**1.84**	-	-	-
SW066	05 Apr 2024	0207_SW066_240405	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.46	1.37	-	**1.15**	-	-	-
SW066	05 Apr 2024	0207_QC212_240405	OMP Apr 2024	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.02	<0.05
SW066	05 Apr 2024	0207_QC112_240405	OMP Apr 2024	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.45	1.36	-	**1.17**	-	-	-

Comments
#1 Reported Analyte LOR is higher than Requested Analyte LOR
#2 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
Locations where new maximums were recorded
Locations where new minimums were recorded

Environmental Standards
HEPA, January 2020, PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems
HEPA, Jan 2020, PFAS NEMP 2.0 2020 Health Drinking Water
HEPA, Jan 2020, PFAS NEMP 2.0 2020 Recreational Water

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
				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				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.002
Location Code	**Date**	**Field ID**	**Monitoring Round**																				
SD007	08 Apr 2019	AACO_SED07_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0004	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD007	23 Mar 2020	0207_SD007_200323	OMP Apr 2020	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD007	12 Apr 2021	0207_QC139_210412	OMP Apr 2021	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD007	12 Apr 2021	0207_QC239_210412	OMP Apr 2021	<0.001	<0.001	<0.001	<0.002	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD007	12 Apr 2021	0207_SD007_210412	OMP Apr 2021	<0.0002	<0.0002	<0.0002	0.0004	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD007	18 Mar 2022	0207_SD007_220318	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0005	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD007	19 Apr 2023	0207_SD007_230419	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0005	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD007	12 Apr 2024	0207_SD007_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD010	08 Apr 2019	AACO_SED10_20190408	OMP Apr 2019	0.0003	<0.0002	<0.0002	0.043	-	<0.0002	-	0.0023	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD010	25 Feb 2020	0207_SD010_200225	OMP Feb 2020	0.0002	<0.0002	0.0004	0.0229	-	0.0003	-	0.0038	<0.001	<0.0002	<0.0002	0.0002	0.0007	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	-
SD010	23 Mar 2021	0207_SD010_210323	OMP Apr 2021	0.0008	<0.0002	0.0010	0.0997	-	0.0008	-	0.0095	<0.001	<0.0002	<0.0002	0.0002	0.0030	<0.0002	0.0004	0.0011	<0.0005	<0.0002	<0.0002	-
SD010	18 Mar 2022	0207_SD010_220318	OMP Apr 2022	<0.0002	0.0005	<0.0002	0.0093	-	<0.0002	-	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD010	15 Mar 2023	0207_SD010_230315	OMP Apr 2023	<0.0002	0.0016	0.0003	0.0530	-	<0.0002	-	0.0016	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD010	12 Apr 2024	0207_SD010_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0109	-	<0.0002	-	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD011	08 Apr 2019	AACO_QC107_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0156	-	<0.0002	-	0.0012	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD011	08 Apr 2019	AACO_QC207_20190408	OMP Apr 2019	<0.001	<0.001	<0.001	0.028	-	<0.001	<0.001	0.0015	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD011	08 Apr 2019	AACO_SED11_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0171	-	<0.0002	-	0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD011	25 Feb 2020	0207_SD011_200225	OMP Feb 2020	<0.0002	<0.0002	<0.0002	0.0172	-	<0.0002	-	0.0020	<0.001	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	-
SD011	23 Mar 2021	0207_SD011_210323	OMP Apr 2021	<0.0002	0.0006	0.0004	0.0371	-	<0.0002	-	0.0023	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0005	0.0002	<0.0005	<0.0002	<0.0002	-
SD011	18 Mar 2022	0207_SD011_220318	OMP Apr 2022	<0.0002	0.0016	0.0003	0.0456	-	<0.0002	-	0.0022	<0.001	<0.0004[#4]	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD011	15 Mar 2023	0207_SD011_230315	OMP Apr 2023	<0.0002	0.0005	<0.0002	0.0131	-	<0.0002	-	0.0007	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD011	12 Apr 2024	0207_SD011_240412	OMP Apr 2024	<0.0005[#4]	0.0011	<0.0005[#4]	0.0158	-	<0.0005[#4]	-	<0.0005[#4]	<0.002[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0012[#4]	<0.0005[#4]	<0.0005[#4]	-
SD013	08 Apr 2019	AACO_SED13_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0011	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD013	23 Mar 2020	0207_QC112_200323	OMP Apr 2020	0.0005	0.0003	0.0007	0.0431	-	0.0003	-	0.0038	<0.001	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-
SD013	23 Mar 2020	0207_QC212_200323	OMP Apr 2020	<0.001	0.0035	<0.001	0.049	-	<0.001	<0.001	0.0054	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD013	23 Mar 2020	0207_SD013_200323	OMP Apr 2020	0.0003	0.0008	0.0003	0.0198	-	<0.0002	-	0.0023	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	-
SD013	13 Apr 2021	0207_SD013_210413	OMP Apr 2021	0.0007	0.0032	<0.0005[#4]	0.0559	-	0.0007	-	0.0035	<0.002[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0012[#4]	<0.0005[#4]	0.0007	-
SD013	18 Apr 2022	0207_QC110_220418	OMP Apr 2022	<0.0002	<0.0004[#4]	<0.0002	0.0026	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD013	18 Apr 2022	0207_QC210_220418	OMP Apr 2022	<0.001	<0.001	<0.001	0.0064	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD013	18 Apr 2022	0207_SD013_220418	OMP Apr 2022	<0.0002	0.0004	<0.0002	0.0028	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD013	15 Mar 2023	0207_SD013_230315	OMP Apr 2023	<0.0002	0.0016	0.0003	0.0372	-	<0.0002	-	0.0012	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD013	12 Apr 2024	0207_SD013_240412	OMP Apr 2024	<0.0002	0.0010	<0.0002	0.0104	-	<0.0002	-	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD015	08 Apr 2019	AACO_QC109_20190408	OMP Apr 2019	<0.0002	0.0006	<0.0002	0.0108	-	<0.0002	-	0.0008	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD015	08 Apr 2019	AACO_QC209_20190408	OMP Apr 2019	<0.001	0.0024	<0.001	0.028	-	<0.001	<0.001	0.0017	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD015	08 Apr 2019	AACO_SED15_20190408	OMP Apr 2019	0.0002	0.0008	<0.0002	0.0205	-	<0.0002	-	0.0017	<0.001	<0.0002	0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0002	-
SD015	25 Feb 2020	0207_SD015_200225	OMP Feb 2020	<0.0002	0.0008	<0.0002	0.0126	-	<0.0002	-	0.0011	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD015	23 Mar 2021	0207_SD015_210323	OMP Apr 2021	<0.0002	0.0016	<0.0002	0.0209	-	<0.0002	-	0.0006	<0.001	<0.0002	<0.0002	0.0003	0.0007	0.0002	0.0005	0.0004	<0.0005	<0.0002	<0.0002	-
SD015	18 Mar 2022	0207_SD015_220318	OMP Apr 2022	<0.0002	0.0013	<0.0002	0.0171	-	<0.0002	-	0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD015	15 Mar 2023	0207_SD015_230315	OMP Apr 2023	<0.0002	0.0026	0.0003	0.0344	-	<0.0002	-	0.0020	<0.001	<0.0002	0.0003	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD015	12 Apr 2024	0207_SD015_240412	OMP Apr 2024	<0.0002	0.0004	<0.0002	0.0030	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD016	08 Apr 2019	AACO_SED16_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0046	-	<0.0002	-	0.0008	<0.001	0.0011	0.0006	0.0003	0.0004	0.0009	0.0006	0.0002	<0.0005	<0.0002	0.0006	-
SD016	25 Feb 2020	0207_SD016_200225	OMP Feb 2020	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	0.0117	-	<0.0010[#4]	-	0.0014	<0.001	<0.0010[#4]	0.0020	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	<0.0025[#4]	<0.0010[#4]	<0.0010[#4]	-
SD016	06 Apr 2020	0207_SED016_200406	OMP Apr 2020	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	0.0089	-	<0.0005[#4]	-	0.0011	<0.001	0.0011	<0.0018[#4]	<0.0005[#4]	0.0009	0.0007	0.0005	0.0008	<0.0013[#4]	<0.0005[#4]	<0.0008[#4]	-

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
				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				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.002
Location Code	**Date**	**Field ID**	**Monitoring Round**																				
SD016	18 Mar 2021	0207_SED016_210318	OMP Apr 2021	<0.0002	0.0003	<0.0002	0.0109	-	<0.0002	-	0.0009	<0.001	0.0014	0.0013	0.0003	0.0004	0.0014	0.0008	0.0002	<0.0005	0.0007	0.0011	-
SD016	23 Mar 2021	0207_SD016_210323	OMP Apr 2021	0.0004	0.0005	0.0002	0.0181	-	0.0002	-	0.0035	0.001	0.0007	0.0009	0.0009	0.0019	0.0011	0.0011	0.0016	<0.0005	0.0003	0.0007	-
SD016	07 Feb 2022	0207_SD016_220207	OMP Feb 2022	<0.0005[#4]	0.0055	<0.0005[#4]	0.0694	-	<0.0005[#4]	-	0.0040	<0.002[#4]	0.0097	0.0192	0.0009	0.0007	0.0041	0.0020	<0.0005[#4]	0.0038	0.0071	0.0134	-
SD016	18 Mar 2022	0207_SD016_220318	OMP Apr 2022	<0.0002	<0.0002	<0.0004[#4]	0.0303	-	<0.0002	-	0.0011	<0.001	0.0007	0.0003	<0.0002	0.0003	0.0008	0.0006	<0.0002	<0.0005	<0.0002	0.0003	-
SD016	15 Mar 2023	0207_SD016_230315	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0069	-	<0.0002	-	0.0004	<0.001	0.0007	0.0011	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0005	0.0004	0.0010	-
SD016	31 Mar 2023	0207_SD016_230331	OMP Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD016	19 Mar 2024	0207_SD016_240319	OMP Apr 2024	0.0002	0.0006	0.0003	0.0419	-	0.0004	-	0.0038	<0.001	<0.0016[#4]	0.0038	<0.0002	<0.0005[#4]	<0.0009[#4]	<0.0005[#4]	<0.0002	<0.0012[#4]	0.0023	0.0021	-
SD016	12 Apr 2024	0207_SD016_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0099	-	<0.0002	-	0.0002	<0.001	0.0008	0.0017	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0005	0.0006	0.0015	-
SD017	09 Apr 2019	AACO_SED17_20190409	OMP Apr 2019	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	0.0461	-	<0.0005[#4]	-	<0.0005[#4]	<0.002[#4]	0.0211	0.0078	<0.0005[#4]	<0.0005[#4]	0.0044	<0.0005[#4]	<0.0005[#4]	<0.0013[#4]	<0.0005[#4]	0.0126	-
SD017	24 Mar 2020	0207_SD017_200324	OMP Apr 2020	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	0.0116	-	<0.0010[#4]	-	<0.0010[#4]	0.006	0.0046	0.0049	<0.0010[#4]	0.0014	0.0013	<0.0010[#4]	0.0035	<0.0025[#4]	0.0011	0.0060	-
SD017	15 Apr 2021	0207_SD017_210415	OMP Apr 2021	<0.0002	0.0033	<0.0002	0.0164	-	<0.0002	-	0.0002	<0.001	0.0022	0.0015	<0.0002	<0.0002	0.0006	<0.0002	0.0004	<0.0005	0.0003	0.0018	-
SD017	13 Apr 2022	0207_SD017_220413	OMP Apr 2022	<0.0002	0.0009	<0.0002	0.0082	-	<0.0002	-	<0.0002	<0.001	0.0012	0.0010	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0005	0.0002	0.0013	-
SD017	18 Apr 2023	0207_SD017_230418	OMP Apr 2023	<0.0002	0.0020	<0.0002	0.0192	-	<0.0002	-	0.0002	<0.001	0.0024	0.0011	<0.0002	<0.0002	0.0007	0.0002	<0.0002	<0.0005	0.0002	0.0018	-
SD017	10 Apr 2024	0207_SD017_240410	OMP Apr 2024	<0.0002	0.0016	<0.0002	0.0135	-	<0.0002	-	0.0004	<0.001	0.0024	0.0014	<0.0002	0.0002	0.0007	0.0004	0.0004	<0.0005	0.0002	0.0013	-
SD018	24 Mar 2020	0207_SD018_200324	OMP Apr 2020	<0.0002	<0.0002	<0.0002	0.0036	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD018	15 Apr 2021	0207_SD018_210415	OMP Apr 2021	<0.0002	<0.0002	<0.0002	0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD018	15 Apr 2022	0207_SD018_B_220415	OMP Apr 2022	<0.0002	<0.0005[#4]	<0.0002	0.0051	-	<0.0002	-	<0.0002	<0.001	0.0004	<0.0002	<0.0002	<0.0002	0.0003	0.0002	<0.0002	<0.0005	<0.0002	0.0004	-
SD018	18 Apr 2023	0207_QC111_230418	OMP Apr 2023	<0.0002	0.0006	<0.0002	0.0078	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD018	18 Apr 2023	0207_QC211_230418	OMP Apr 2023	<0.001	<0.001	<0.001	0.0065	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD018	18 Apr 2023	0207_SD018_230418	OMP Apr 2023	<0.0002	0.0004	<0.0002	0.0053	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD018	08 Apr 2024	0207_SD018_240408	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0036	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD022	09 Apr 2019	AACO_SED22_20190409	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0038	-	<0.0002	-	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD022	25 Feb 2020	0207_SD022_200225	OMP Feb 2020	<0.0002	<0.0002	<0.0002	0.0074	-	<0.0002	-	0.0010	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD022	18 Mar 2021	0207_SED022_210318	OMP Apr 2021	<0.0002	0.0011	0.0002	0.0167	-	<0.0002	-	0.0016	<0.001	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	-
SD022	23 Mar 2021	0207_SD022_210323	OMP Apr 2021	<0.0002	0.0009	<0.0002	0.0172	-	<0.0002	-	0.0011	<0.001	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	0.0003	0.0003	<0.0005	<0.0002	<0.0002	-
SD022	07 Feb 2022	0207_SD022_220207	OMP Feb 2022	0.0002	0.0284	0.0010	0.129	-	0.0005	-	0.0064	<0.001	0.0003	0.0005	<0.0002	0.0005	0.0003	0.0009	<0.0002	<0.0005	<0.0004[#4]	0.0004	-
SD022	18 Mar 2022	0207_SD022_220318	OMP Apr 2022	<0.0002	<0.0004[#4]	<0.0002	0.0160	-	<0.0002	-	0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD022	31 Mar 2023	0207_SD022_230331	OMP Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD022	19 Apr 2023	0207_SD022_230419	OMP Apr 2023	<0.0002	0.0023	0.0002	0.0228	-	<0.0002	-	0.0012	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD022	19 Mar 2024	0207_SD022_240319	OMP Apr 2024	<0.0002	0.0023	0.0002	0.0301	-	<0.0002	-	0.0019	<0.001	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD022	05 Apr 2024	0207_SD022_240405	OMP Apr 2024	<0.0002	0.0006	<0.0002	0.0242	-	<0.0002	-	0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD024	08 Apr 2019	AACO_QC111_20190408	OMP Apr 2019	0.0003	<0.0002	0.0005	0.284	-	0.0004	-	0.0057	<0.001	<0.0002	<0.0002	0.0003	0.0013	<0.0002	0.0016	0.0003	<0.0005	<0.0002	<0.0002	-
SD024	08 Apr 2019	AACO_QC211_20190408	OMP Apr 2019	<0.001	<0.001	<0.001	0.37	-	<0.001	<0.001	0.007	<0.002	<0.001	<0.002	<0.001	0.0016	<0.001	0.0023	<0.002	<0.002	<0.002	<0.002	<0.002
SD024	08 Apr 2019	AACO_SED24_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0474	-	<0.0002	-	0.0016	<0.001	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	0.0004	<0.0002	<0.0005	<0.0002	<0.0002	-
SD024	25 Feb 2020	0207_SD024_200225	OMP Feb 2020	<0.0002	<0.0002	<0.0002	0.0107	-	0.0002	-	0.0020	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD024	23 Mar 2021	0207_SD024_210323	OMP Apr 2021	0.0008	<0.0002	0.0010	0.0624	-	0.0009	-	0.0091	<0.001	<0.0002	<0.0002	<0.0002	0.0026	<0.0002	0.0004	0.0012	<0.0005	<0.0002	<0.0002	-
SD024	18 Mar 2022	0207_QC162_220318	OMP Apr 2022	<0.0004[#4]	0.0016	<0.0004[#4]	0.0405	-	<0.0002	-	0.0022	<0.001	<0.0004[#4]	<0.0005[#4]	<0.0002	0.0003	<0.0002	<0.0002	0.0002	<0.0005	<0.0002	<0.0005[#4]	-
SD024	18 Mar 2022	0207_QC262_220318	OMP Apr 2022	<0.001	<0.001	<0.001	0.03	-	<0.001	<0.001	0.0012	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD024	18 Mar 2022	0207_SD024_220318	OMP Apr 2022	<0.0004[#4]	0.0015	0.0004	0.0349	-	<0.0002	-	0.0025	<0.001	<0.0004[#4]	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0003	-
SD024	15 Mar 2023	0207_QC103_230315	OMP Apr 2023	0.0008	<0.0002	0.0009	0.0688	-	0.0005	-	0.0076	<0.001	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	0.0004	<0.0002	<0.0006[#4]	<0.0002	<0.0002	-
SD024	15 Mar 2023	0207_QC203_230315	OMP Apr 2023	<0.001	<0.001	<0.001	0.073	-	<0.001	<0.001	0.0076	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD024	15 Mar 2023	0207_SD024_230315	OMP Apr 2023	0.0010	0.0004	0.0009	0.0678	-	0.0007	-	0.0079	<0.001	<0.0002	0.0004	<0.0002	0.0007	<0.0002	0.0002	<0.0002	<0.0006[#4]	0.0004	<0.0002	-
SD024	03 Apr 2024	0207_QC113_240403	OMP Apr 2024	<0.0002	0.0006	<0.0002	0.0411	-	<0.0002	-	0.0018	<0.001	<0.0002	0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
				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				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.002
Location Code	**Date**	**Field ID**	**Monitoring Round**																				
SD024	03 Apr 2024	0207_QC213_240403	OMP Apr 2024	<0.001	<0.001	<0.001	0.029	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD024	03 Apr 2024	0207_SD024_240403	OMP Apr 2024	<0.0002	0.0004	<0.0002	0.0196	-	<0.0002	-	0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD025	09 Apr 2019	AACO_SED25_20190409	OMP Apr 2019	<0.0002	0.0011	<0.0002	0.0152	-	<0.0002	-	0.0016	<0.001	0.0051	0.0056	0.0008	0.001	0.0029	0.002	0.0007	0.0025	0.0027	0.0046	-
SD025	25 Feb 2020	0207_QC107_200225	OMP Feb 2020	<0.0010[#4]	0.0011	<0.0010[#4]	0.0382	-	<0.0010[#4]	-	0.0011	0.002	0.206	0.822	0.0052	0.0038	0.0608	0.0168	0.0024	0.276	0.402	0.300	-
SD025	25 Feb 2020	0207_QC207_200225	OMP Feb 2020	<0.001	<0.001	<0.001	0.032	-	<0.001	0.0037	<0.001	<0.002	0.18	0.69	0.0068	0.0051	0.027	0.010	0.0035	0.36	0.54	0.44	0.064
SD025	25 Feb 2020	0207_SD025_200225	OMP Feb 2020	<0.0010[#4]	<0.0012[#4]	<0.0010[#4]	0.0523	-	<0.0010[#4]	-	0.0042	0.002	0.226	1.49	0.0069	0.0052	0.0400	0.0088	0.0042	0.621	0.856	0.436	-
SD025	23 Mar 2021	0207_SD025_210323	OMP Apr 2021	<0.0002	0.0009	<0.0002	0.0106	-	<0.0002	-	0.0005	<0.001	0.0031	0.0023	0.0004	0.0004	0.0017	0.0008	0.0005	0.0009	0.0013	0.0016	-
SD025	18 Mar 2022	0207_SD025_220318	OMP Apr 2022	<0.0005[#4]	0.0029	<0.0005[#4]	0.0356	-	<0.0005[#4]	-	0.0014	<0.002[#4]	0.0023	0.0259	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	0.0010	0.0328	0.0237	0.0071	-
SD025	15 Mar 2023	0207_SD025_230315	OMP Apr 2023	<0.0010[#4]	0.0072	<0.0010[#4]	0.0649	-	<0.0010[#4]	-	0.0034	<0.005[#4]	0.147	1.46	0.0039	0.0022	0.0254	0.0119	<0.0010[#4]	1.99	1.49	0.538	-
SD025	03 Apr 2024	0207_QC114_240403	OMP Apr 2024	<0.0002	0.0190	0.0023	1.24	-	<0.0002	-	0.0002	0.001	0.744	0.932	0.0055	0.0027	0.0421	0.0148	0.0028	0.483	0.558	0.791	-
SD025	03 Apr 2024	0207_QC214_240403	OMP Apr 2024	<0.001	<0.001	<0.001	0.0064	-	<0.001	<0.001	<0.001	<0.002	0.034	0.49	0.004	0.0019	0.012	0.0083	<0.002	0.27	0.33	0.15	0.039
SD025	03 Apr 2024	0207_SD025_240403	OMP Apr 2024	<0.0002	0.0009	<0.0002	0.0098	-	<0.0002	-	<0.0002	<0.001	0.0386	0.413	0.0044	0.0026	0.0121	0.0082	0.0023	0.270	0.312	0.139	-
SD032	09 Apr 2019	AACO_SED32_20190409	OMP Apr 2019	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD032	24 Mar 2020	0207_SD032_200324	OMP Apr 2020	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD032	15 Apr 2021	0207_SD032_210415	OMP Apr 2021	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD032	13 Apr 2022	0207_SD032_220413	OMP Apr 2022	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD032	08 Apr 2024	0207_SD032_240408	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0003	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD036	08 Apr 2019	AACO_SED36_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0013	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD036	23 Mar 2020	0207_SD036_200323	OMP Apr 2020	<0.0002	<0.0002	<0.0002	0.0032	-	<0.0002	-	<0.0002	<0.001	0.0006	0.0010	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD036	13 Apr 2021	0207_SD036_210413	OMP Apr 2021	<0.0002	0.0008	<0.0002	0.0114	-	<0.0002	-	0.0006	<0.001	0.0012	0.0021	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	0.0002	0.0004	-
SD036	15 Apr 2022	0207_SD036_220415	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD036	15 Mar 2023	0207_SD036_230315	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0119	-	<0.0002	-	0.0007	<0.001	0.0008	0.0010	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD036	12 Apr 2024	0207_SD036_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0011	-	<0.0002	-	<0.0002	<0.001	<0.0002	0.0025	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD037	08 Apr 2019	AACO_SED37_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0073	-	<0.0002	-	0.0003	<0.001	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD037	13 Apr 2021	0207_SD037_210413	OMP Apr 2021	<0.0002	<0.0002	<0.0002	0.0078	-	<0.0002	-	0.0010	<0.001	0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD037	16 Apr 2022	0207_SD037_220416	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0014	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD037	15 Mar 2023	0207_SD037_230315	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0029	-	<0.0002	-	0.0003	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD037	12 Apr 2024	0207_SD037_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0083	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD038	09 Apr 2019	AACO_SED38_20190409	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0017	-	<0.0002	-	0.0004	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD038	23 Mar 2020	0207_SD038_200323	OMP Apr 2020	<0.0002	<0.0002	<0.0002	0.0006	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD038	13 Apr 2021	0207_SD038_210413	OMP Apr 2021	<0.0002	<0.0002	<0.0002	0.0016	-	<0.0002	-	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD038	14 Apr 2022	0207_QC103_220414	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0012	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD038	14 Apr 2022	0207_QC203_220414	OMP Apr 2022	<0.001	<0.001	<0.001	<0.002	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD038	14 Apr 2022	0207_SD038_220414	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0007	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD038	15 Mar 2023	0207_SD038_230315	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0021	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD038	12 Apr 2024	0207_SD038_240412	OMP Apr 2024	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	0.0017	-	<0.0004[#4]	-	<0.0004[#4]	<0.002[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0010[#4]	<0.0004[#4]	<0.0004[#4]	-
SD040	09 Apr 2019	AACO_SED40_20190409	OMP Apr 2019	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD040	23 Mar 2020	0207_QC110_200323	OMP Apr 2020	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD040	23 Mar 2020	0207_QC210_200323	OMP Apr 2020	<0.001	<0.001	<0.001	<0.002	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD040	23 Mar 2020	0207_SD040_200323	OMP Apr 2020	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD040	12 Apr 2021	0207_QC141_210412	OMP Apr 2021	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD040	12 Apr 2021	0207_QC241_210412	OMP Apr 2021	<0.001	<0.001	<0.001	<0.002	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD040	12 Apr 2021	0207_SD040_210412	OMP Apr 2021	<0.0002	<0.0014[#4]	<0.0002	0.0004	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-

	PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
	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	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.002
Location Code	**Date**	**Field ID**	**Monitoring Round**																	
SD040	18 Mar 2022	0207_SD040_220318	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD040	19 Apr 2023	0207_SD040_230419	OMP Apr 2023	<0.0002	<0.0002	<0.0002	<0.0004[#4]	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD040	12 Apr 2024	0207_SD040_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD045	24 Mar 2020	0207_SD045_200324	OMP Apr 2020	<0.0002	<0.0002	<0.0002	0.0004	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD045	20 Apr 2021	0207_SD045_210420	OMP Apr 2021	<0.0002	0.0002	<0.0002	0.0074	-	<0.0002	-	0.0006	<0.001	0.0003	<0.0002	0.0002	0.0003	0.0002	0.0007	<0.0002	<0.0005	<0.0002	<0.0002	-
SD045	13 Apr 2022	0207_SD045_220413	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0005	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD045	08 Apr 2024	0207_SD045_240408	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0008	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD070	09 Apr 2019	AACO_SED70_20190409	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0004	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD070	23 Mar 2020	0207_SD070_200323	OMP Apr 2020	<0.0002	<0.0002	<0.0002	0.0002	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD070	15 Apr 2021	0207_SD070_210415	OMP Apr 2021	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD070	16 Apr 2022	0207_SD070_220416	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0006	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD070	15 Mar 2023	0207_SD070_230315	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0011	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD070	12 Apr 2024	0207_SD070_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0011	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD081	06 Apr 2020	0207_SED024_200406	OMP Apr 2020	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	0.0039	-	<0.0005[#4]	-	0.0005	<0.001	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0005[#4]	<0.0013[#4]	<0.0005[#4]	<0.0005[#4]	-
SD081	18 Mar 2021	0207_SED024_210318	OMP Apr 2021	0.0005	0.0004	0.0009	0.0638	-	0.0005	-	0.0047	<0.001	<0.0002	<0.0009[#4]	<0.0002	0.0006	<0.0002	0.0003	<0.0002	<0.0005	0.0005	0.0004	-
SD081	07 Feb 2022	0207_QC101_220207	OMP Feb 2022	<0.0002	<0.0002	<0.0002	0.0108	-	<0.0002	-	0.0007	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD081	07 Feb 2022	0207_QC201_220207	OMP Feb 2022	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-
SD081	07 Feb 2022	0207_SD081_220207	OMP Feb 2022	<0.0002	<0.0002	0.0002	0.0117	-	<0.0002	-	0.0015	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD081	31 Mar 2023	0207_SD024_230331	OMP Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD081	19 Mar 2024	0207_SD081_240319	OMP Apr 2024	0.0004	0.0002	0.0002	0.0199	-	0.0004	-	0.0035	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD083	08 Apr 2020	0207_QC102_200408	OMP Apr 2020	<0.0002	0.0002	<0.0002	0.0077	-	<0.0002	-	0.0007	0.002	0.0254	0.0405	0.0044	0.0031	0.0134	0.0066	0.0041	0.0180	0.0212	0.0204	-
SD083	08 Apr 2020	0207_QC202_200408	OMP Apr 2020	<0.005	<0.005	<0.005	0.012[#7]	<0.005	<0.005	<0.005	<0.005	<0.005	0.026	0.075	<0.005	<0.005	0.014	0.0068	<0.005	0.035	0.049	0.025	-
SD083	08 Apr 2020	0207_SED025_200408	OMP Apr 2020	<0.0002	0.0003	<0.0002	0.0112	-	<0.0002	-	0.0009	0.003	0.0376	0.0598	0.0051	0.0038	0.0166	0.0080	0.0052	0.0271	0.0370	0.0314	-
SD083	18 Mar 2021	0207_SED025_210318	OMP Apr 2021	<0.0002	0.0006	<0.0002	0.0075	-	<0.0002	-	0.0008	0.002	0.0233	0.0356	0.0039	0.0031	0.0143	0.0102	0.0043	0.0185	0.0221	0.0197	-
SD083	07 Feb 2022	0207_SD083_220207	OMP Feb 2022	<0.0002	0.0047	0.0002	0.0161	-	<0.0002	-	0.0008	<0.001	0.0052	0.0146	0.0011	0.0007	0.0029	0.0014	0.0004	0.0101	0.0096	0.0072	-
SD083	19 Mar 2024	0207_SD083_240319	OMP Apr 2024	0.0004	0.0048	0.0005	0.0256	-	0.0003	-	0.0029	<0.001	0.0092	0.0297	0.0017	0.0008	0.0060	0.0025	0.0004	0.0443	0.0340	0.0156	-
SD102	08 Apr 2019	AACO_SED102_20190408	OMP Apr 2019	<0.001[#4]	<0.001[#4]	<0.001[#4]	0.0746	-	<0.001[#4]	-	0.0078	<0.005[#4]	<0.001[#4]	<0.001[#4]	<0.001[#4]	0.0025	<0.001[#4]	<0.001[#4]	<0.001[#4]	<0.0025[#4]	<0.001[#4]	<0.001[#4]	-
SD102	23 Mar 2020	0207_SD102_200323	OMP Apr 2020	<0.0002	0.0014	<0.0002	0.0039	-	<0.0002	-	<0.0002	<0.001	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD102	13 Apr 2021	0207_QC144_210413	OMP Apr 2021	<0.0002	0.0014	<0.0002	0.0022	-	<0.0002	-	0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD102	13 Apr 2021	0207_QC244_210413	OMP Apr 2021	<0.001	<0.001	<0.001	0.013	-	<0.001	<0.001	0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD102	13 Apr 2021	0207_SD102_210413	OMP Apr 2021	<0.0002	0.0012	<0.0002	0.0126	-	<0.0002	-	0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD102	16 Apr 2022	0207_SD102_220416	OMP Apr 2022	<0.0002	<0.0003[#4]	<0.0002	0.0019	-	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD102	15 Mar 2023	0207_QC101_230315	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0144	-	<0.0002	-	0.0007	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD102	15 Mar 2023	0207_QC201_230315	OMP Apr 2023	<0.001	<0.001	<0.001	0.011	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002
SD102	15 Mar 2023	0207_SD102_230315	OMP Apr 2023	<0.0002	0.0008	<0.0002	0.0083	-	<0.0002	-	0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD102	12 Apr 2024	0207_SD102_240412	OMP Apr 2024	<0.0004[#4]	0.0017	<0.0004[#4]	0.0175	-	<0.0004[#4]	-	<0.0004[#4]	<0.002[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0004[#4]	<0.0010[#4]	<0.0004[#4]	<0.0004[#4]	-
SD105	08 Apr 2019	AACO_SED105_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0092	-	<0.0002	-	0.0002	<0.001	0.0007	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD105	23 Mar 2020	0207_SD105_200323	OMP Apr 2020	0.0002	<0.0002	<0.0002	0.0050	-	<0.0002	-	0.0004	<0.001	0.0008	0.0011	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0002	<0.0002	-
SD105	13 Apr 2021	0207_SD105_210413	OMP Apr 2021	<0.0002	0.0004	<0.0002	0.0153	-	<0.0002	-	0.0008	<0.001	0.0009	0.0006	0.0002	0.0004	0.0002	0.0016	<0.0002	<0.0005	<0.0002	<0.0002	-
SD105	15 Apr 2022	0207_SD105_220415	OMP Apr 2022	<0.0002	<0.0002	<0.0002	0.0022	-	<0.0002	-	<0.0002	<0.001	0.0011	0.0014	<0.0002	<0.0002	<0.0002	<0.0003[#4]	<0.0002	0.0006	<0.0002	<0.0002	-
SD105	15 Mar 2023	0207_SD105_230315	OMP Apr 2023	<0.0002	0.0004	<0.0002	0.0113	-	<0.0002	-	0.0006	<0.001	0.0005	0.0012	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	0.0002	-
SD105	12 Apr 2024	0207_SD105_240412	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0077	-	<0.0002	-	<0.0002	<0.001	0.0011	0.0003	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD106	09 Apr 2019	AACO_SED106_20190409	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0038	-	<0.0002	-	0.0003	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
				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				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.002
Location Code	**Date**	**Field ID**	**Monitoring Round**																				
SD106	25 Feb 2020	0207_SD106_200225	OMP Feb 2020	0.0004	<0.0002	0.0006	0.0371	-	0.0005	-	0.0060	<0.001	<0.0002	<0.0002	0.0003	0.0012	0.0002	0.0009	0.0003	<0.0005	<0.0002	<0.0002	-
SD106	23 Mar 2021	0207_SD106_210323	OMP Apr 2021	0.0004	0.0034	0.0005	0.152	-	0.0004	-	0.0046	<0.001	0.0006	<0.0002	0.0003	0.0017	0.0004	0.0010	0.0009	<0.0005	<0.0002	0.0003	-
SD106	18 Mar 2022	0207_SD106_220318	OMP Apr 2022	<0.0004[#4]	0.0057	0.0009	0.102	-	<0.0004[#4]	-	0.0041	<0.001	0.0150	0.0887	<0.0006[#4]	0.0005	0.0024	0.0013	0.0004	0.0081	0.0193	0.0765	-
SD106	19 Apr 2023	0207_SD106_230419	OMP Apr 2023	<0.0002	<0.0002	0.0008	0.0600	-	<0.0002	-	0.0026	<0.001	0.0029	0.0084	0.0008	0.0008	0.0029	0.0016	0.0006	0.0021	0.0029	0.0046	-
SD106	05 Apr 2024	0207_SD106_240405	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0484	-	<0.0002	-	0.0014	<0.001	0.0004	0.0019	<0.0002	0.0003	0.0005	0.0004	<0.0002	<0.0005	0.0006	0.0008	-
SD107	08 Apr 2019	AACO_SED107_20190408	OMP Apr 2019	<0.0002	<0.0002	<0.0002	0.0004	-	<0.0002	-	<0.0002	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD107	25 Feb 2020	0207_SD107_200225	OMP Feb 2020	<0.0002	<0.0002	<0.0002	0.0068	-	<0.0002	-	0.0018	<0.001	0.0014	0.0016	0.0006	0.0006	0.0013	0.0012	0.0004	<0.0005	0.0004	0.0018	-
SD107	23 Mar 2021	0207_SD107_210323	OMP Apr 2021	<0.0002	0.0007	<0.0002	0.0170	-	<0.0002	-	0.0023	0.001	0.0014	0.0020	0.0012	0.0014	0.0014	0.0017	0.0014	<0.0005	0.0007	0.0013	-
SD107	18 Mar 2022	0207_SD107_220318	OMP Apr 2022	<0.0002	0.0023	<0.0002	0.0213	-	<0.0002	-	0.0010	<0.001	0.0048	0.0124	<0.0002	<0.0002	0.0008	0.0002	<0.0002	0.0021	0.0037	0.0081	-
SD107	15 Mar 2023	0207_SD107_230315	OMP Apr 2023	<0.0002	<0.0002	<0.0002	0.0068	-	<0.0002	-	0.0005	<0.001	0.0009	0.0018	<0.0002	<0.0002	0.0004	0.0002	<0.0002	<0.0005	0.0006	0.0015	-
SD107	03 Apr 2024	0207_QC115_240403	OMP Apr 2024	<0.0002	0.0006	0.0003	0.0311	-	<0.0002	-	0.0026	<0.001	0.0052	0.0108	0.0004	0.0004	0.0015	0.0009	0.0004	0.0052	0.0074	0.0077	-
SD107	03 Apr 2024	0207_QC215_240403	OMP Apr 2024	<0.001	<0.001	<0.001	0.026	-	<0.001	<0.001	0.0028	<0.002	0.006	0.012	<0.001	<0.001	0.0018	<0.001	<0.002	0.0028	0.0043	0.0085	<0.002
SD107	03 Apr 2024	0207_SD107_240403	OMP Apr 2024	0.0003	0.0011	0.0005	0.0425	-	<0.0002	-	0.0031	<0.001	0.0051	0.0172	0.0004	0.0005	0.0017	0.0010	0.0006	0.0067	0.0110	0.0110	-
SD108	18 Mar 2021	0207_QC101_210318	OMP Apr 2021	<0.0002	0.0004	<0.0002	0.0105	-	<0.0002	-	0.0011	<0.001	0.0013	0.0012	0.0003	0.0004	0.0017	0.0010	0.0002	<0.0005	0.0004	0.0009	-
SD108	18 Mar 2021	0207_QC201_210318	OMP Apr 2021	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-
SD108	19 Mar 2024	0207_QC101_240319	OMP Apr 2024	0.0002	0.0005	0.0004	0.0330	-	0.0005	-	0.0047	<0.001	<0.0010[#4]	0.0039	<0.0002	<0.0005[#4]	<0.0011[#4]	0.0005	<0.0002	<0.0012[#4]	0.0026	0.0029	-
SD108	19 Mar 2024	0207_QC201_240319	OMP Apr 2024	0.0002	<0.0001	0.0004[#7]	0.03[#7]	0.0001	0.0002[#7]	<0.0001	0.0022[#7]	<0.0005	0.0011	0.0011	0.0001	0.0003	0.0006	0.0005[#7]	0.0002	<0.0001	0.0006	0.0008	-
SD130	08 Apr 2020	0207_SED130_200406	OMP Apr 2020	<0.0002	0.0009	0.0003	0.0361	-	0.0002	-	0.0035	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	0.0004	0.0002	<0.0005	<0.0002	<0.0002	-
SD130	18 Mar 2021	0207_SED130_210318	OMP Apr 2021	<0.0002	<0.0002	0.0003	0.0138	-	<0.0002	-	0.0024	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-
SD130	07 Feb 2022	0207_SD130_220207	OMP Feb 2022	0.0002	<0.0018[#4]	0.0006	0.0592	-	<0.0003[#4]	-	0.0022	<0.001	<0.0004[#4]	0.0004	<0.0002	<0.0003[#4]	<0.0003[#4]	0.0002	<0.0002	<0.0005	<0.0003[#4]	<0.0003[#4]	-
SD130	19 Mar 2024	0207_SD130_240319	OMP Apr 2024	<0.0002	<0.0002	<0.0002	0.0084	-	<0.0002	-	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	-

Comments

#1 ESDAT Combined with Non-Detect Multiplier of 0.5. Some Analytes are missing from this Combined Compound.
#2 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#3 ESDAT Combined with Non-Detect Multiplier of 0.5.
#4 Reported Analyte LOR is higher than Requested Analyte LOR
#5 Calculated manually
#6 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear standard.
#7 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

Locations where new maximums were recorded
Locations where new minimums were recorded

Appendix B
Table 5
Historical Sediment Analytical Results

	PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums					PFAS	
	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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0001	0.0005	0.0001	0.0001	0.0002	0.2	0.0001	0.0001	0.0001	0.002	0.005
Location Code	**Date**	**Field ID**	**Monitoring Round**																
SD007	08 Apr 2019	AACO_SED07_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	0.4	-	0.0004	-	-	-
SD007	23 Mar 2020	0207_SD007_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD007	12 Apr 2021	0207_QC139_210412	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD007	12 Apr 2021	0207_QC239_210412	OMP Apr 2021	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD007	12 Apr 2021	0207_SD007_210412	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	0.4	-	0.0004	-	-	-
SD007	18 Mar 2022	0207_SD007_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.5	-	0.0005	-	-	-
SD007	19 Apr 2023	0207_SD007_230419	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.5	-	0.0005	-	-	-
SD007	12 Apr 2024	0207_SD007_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD010	08 Apr 2019	AACO_SED10_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0456	45.6	-	0.0453	-	-	-
SD010	25 Feb 2020	0207_SD010_200225	OMP Feb 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0289	28.2	-	0.0267	-	-	-
SD010	23 Mar 2021	0207_SD010_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.116	115	-	0.109	-	-	-
SD010	18 Mar 2022	0207_SD010_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0103	9.8	-	0.0098	-	-	-
SD010	15 Mar 2023	0207_SD010_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0567	54.6	-	0.0546	-	-	-
SD010	12 Apr 2024	0207_SD010_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0114	11.4	-	0.0114	-	-	-
SD011	08 Apr 2019	AACO_QC107_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0168	16.8	-	0.0168	-	-	-
SD011	08 Apr 2019	AACO_QC207_20190408	OMP Apr 2019	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD011	08 Apr 2019	AACO_SED11_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.018	18	-	0.018	-	-	-
SD011	25 Feb 2020	0207_SD011_200225	OMP Feb 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0201	20.1	-	0.0192	-	-	-
SD011	23 Mar 2021	0207_SD011_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0416	40.6	-	0.0394	-	-	-
SD011	18 Mar 2022	0207_SD011_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0499	48.0	-	0.0478	-	-	-
SD011	15 Mar 2023	0207_SD011_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0143	13.8	-	0.0138	-	-	-
SD011	12 Apr 2024	0207_SD011_240412	OMP Apr 2024	<0.0012[#4]	<0.0005[#4]	<0.0012[#4]	<0.0012[#4]	<0.0005[#4]	<0.0012[#4]	<0.0005[#4]	<0.0012[#4]	<0.0012[#4]	<0.0012[#4]	<0.0012[#4]	0.0169	15.8	-	0.0158	-	-	-
SD013	08 Apr 2019	AACO_SED13_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0011	1.1	-	0.0011	-	-	-
SD013	23 Mar 2020	0207_QC112_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	0.0500	48.3	-	0.0469	-	-	-
SD013	23 Mar 2020	0207_QC212_200323	OMP Apr 2020	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD013	23 Mar 2020	0207_SD013_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	0.0250	23.1	-	0.0221	-	-	-
SD013	13 Apr 2021	0207_SD013_210413	OMP Apr 2021	<0.0012[#4]	<0.0005[#4]	<0.0012[#4]	<0.0012[#4]	<0.0005[#4]	<0.0012[#4]	0.0017	<0.0005	<0.0005	<0.0005	<0.0005	0.0664	60.1	-	0.0594	-	-	-
SD013	18 Apr 2022	0207_QC110_220418	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0028	2.6	-	0.0026	-	-	-
SD013	18 Apr 2022	0207_QC210_220418	OMP Apr 2022	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD013	18 Apr 2022	0207_SD013_220418	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0032	2.8	-	0.0028	-	-	-
SD013	15 Mar 2023	0207_SD013_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0010	<0.0005	<0.0005	<0.0005	<0.0005	0.0413	38.4	-	0.0384	-	-	-
SD013	12 Apr 2024	0207_SD013_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	0.0122	10.8	-	0.0108	-	-	-
SD015	08 Apr 2019	AACO_QC109_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0122	11.6	-	0.0116	-	-	-
SD015	08 Apr 2019	AACO_QC209_20190408	OMP Apr 2019	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD015	08 Apr 2019	AACO_SED15_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.024	22.6	-	0.0222	-	-	-
SD015	25 Feb 2020	0207_SD015_200225	OMP Feb 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0145	13.7	-	0.0137	-	-	-
SD015	23 Mar 2021	0207_SD015_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0252	23.4	-	0.0215	-	-	-
SD015	18 Mar 2022	0207_SD015_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0190	17.7	-	0.0177	-	-	-
SD015	15 Mar 2023	0207_SD015_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0398	36.6	-	0.0364	-	-	-
SD015	12 Apr 2024	0207_SD015_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0034	3.0	-	0.0030	-	-	-
SD016	08 Apr 2019	AACO_SED16_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0007	<0.0005	0.0108	7.6	-	0.0054	-	-	-
SD016	25 Feb 2020	0207_SD016_200225	OMP Feb 2020	<0.0025[#4]	<0.0010[#4]	<0.0025[#4]	<0.0025[#4]	<0.0010[#4]	<0.0025[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	0.0151	13.1	-	0.0131	-	-	-
SD016	06 Apr 2020	0207_SED016_200406	OMP Apr 2020	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	<0.0005[#4]	<0.0005	<0.0005	<0.0005	<0.0005	0.0140	12.2	-	0.0100	-	-	-

				PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums					PFAS	
				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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0001	0.0005	0.0001	0.0001	0.0002	0.2	0.0001	0.0001	0.0001	0.002	0.005
Location Code	**Date**	**Field ID**	**Monitoring Round**																		
SD016	18 Mar 2021	0207_SED016_210318	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0008	<0.0005	0.0205	14.3	-	0.0118	-	-	-
SD016	23 Mar 2021	0207_SD016_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0331	28.5	-	0.0216	-	-	-
SD016	07 Feb 2022	0207_SD016_220207	OMP Feb 2022	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	0.0012	<0.0005	<0.0005	0.0032	<0.0005	0.144	80.2	-	0.0734	-	-	-
SD016	18 Mar 2022	0207_SD016_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0344	32.3	-	0.0314	-	-	-
SD016	15 Mar 2023	0207_SD016_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0108	7.3	-	0.0073	-	-	-
SD016	31 Mar 2023	0207_SD016_230331	OMP Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD016	19 Mar 2024	0207_SD016_240319	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005[#4]	<0.0005	<0.0005	<0.0005	<0.0005	0.0554	45.9	-	0.0457	-	-	-
SD016	12 Apr 2024	0207_SD016_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0150	10.1	-	0.0101	-	-	-
SD017	09 Apr 2019	AACO_SED17_20190409	OMP Apr 2019	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	<0.0005[#4]	<0.0005	<0.0005	0.0044	<0.0005	0.0964	50.5	-	0.0461	-	-	-
SD017	24 Mar 2020	0207_SD017_200324	OMP Apr 2020	<0.0025[#4]	<0.0010[#4]	<0.0025[#4]	<0.0025[#4]	<0.0010[#4]	<0.0025[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	0.0012	<0.0010[#4]	0.0416	23.7	-	0.0116	-	-	-
SD017	15 Apr 2021	0207_SD017_210415	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0009	<0.0005	0.0276	17.9	-	0.0166	-	-	-
SD017	13 Apr 2022	0207_SD017_220413	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0006[#4]	<0.0005	0.0132	8.2	-	0.0082	-	-	-
SD017	18 Apr 2023	0207_SD017_230418	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0278	19.6	-	0.0194	-	-	-
SD017	10 Apr 2024	0207_SD017_240410	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0009	<0.0005	0.0234	15.8	-	0.0139	-	-	-
SD018	24 Mar 2020	0207_SD018_200324	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	3.6	-	0.0036	-	-	-
SD018	15 Apr 2021	0207_SD018_210415	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	0.2	-	0.0002	-	-	-
SD018	15 Apr 2022	0207_SD018_B_220415	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0064	5.3	-	0.0051	-	-	-
SD018	18 Apr 2023	0207_QC111_230418	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0084	7.8	-	0.0078	-	-	-
SD018	18 Apr 2023	0207_QC211_230418	OMP Apr 2023	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD018	18 Apr 2023	0207_SD018_230418	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0057	5.3	-	0.0053	-	-	-
SD018	08 Apr 2024	0207_SD018_240408	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	3.6	-	0.0036	-	-	-
SD022	09 Apr 2019	AACO_SED22_20190409	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0043	4.3	-	0.0043	-	-	-
SD022	25 Feb 2020	0207_SD022_200225	OMP Feb 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0084	8.4	-	0.0084	-	-	-
SD022	18 Mar 2021	0207_SED022_210318	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0208	19.5	-	0.0183	-	-	-
SD022	23 Mar 2021	0207_SD022_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0202	19.3	-	0.0183	-	-	-
SD022	07 Feb 2022	0207_SD022_220207	OMP Feb 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	0.171	137	-	0.135	-	-	-
SD022	18 Mar 2022	0207_SD022_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0169	16.9	-	0.0169	-	-	-
SD022	31 Mar 2023	0207_SD022_230331	OMP Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD022	19 Apr 2023	0207_SD022_230419	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0265	24.0	-	0.0240	-	-	-
SD022	19 Mar 2024	0207_SD022_240319	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0357	32.4	-	0.0320	-	-	-
SD022	05 Apr 2024	0207_SD022_240405	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0259	25.3	-	0.0251	-	-	-
SD024	08 Apr 2019	AACO_QC111_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0021	<0.0005	<0.0005	<0.0005	<0.0005	0.296	294	-	0.29	-	-	-
SD024	08 Apr 2019	AACO_QC211_20190408	OMP Apr 2019	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	0.0053	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD024	08 Apr 2019	AACO_SED24_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	0.0516	50.2	-	0.049	-	-	-
SD024	25 Feb 2020	0207_SD024_200225	OMP Feb 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0134	13.2	-	0.0127	-	-	-
SD024	23 Mar 2021	0207_SD024_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0784	76.5	-	0.0715	-	-	-
SD024	18 Mar 2022	0207_QC162_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0453	43.2	-	0.0427	-	-	-
SD024	18 Mar 2022	0207_QC262_220318	OMP Apr 2022	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD024	18 Mar 2022	0207_SD024_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	0.0407	37.8	-	0.0374	-	-	-
SD024	15 Mar 2023	0207_QC103_230315	OMP Apr 2023	<0.0006[#4]	<0.0002	<0.0006[#4]	<0.0006[#4]	<0.0002	<0.0006[#4]	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0796	78.2	-	0.0764	-	-	-
SD024	15 Mar 2023	0207_QC203_230315	OMP Apr 2023	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD024	15 Mar 2023	0207_SD024_230315	OMP Apr 2023	<0.0006[#4]	<0.0002	<0.0006[#4]	<0.0006[#4]	<0.0002	<0.0006[#4]	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	0.0815	77.6	-	0.0757	-	-	-
SD024	03 Apr 2024	0207_QC113_240403	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0442	43.2	-	0.0429	-	-	-

				PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums					PFAS	
				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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0001	0.0005	0.0001	0.0001	0.0002	0.2	0.0001	0.0001	0.0001	0.002	0.005
Location Code	**Date**	**Field ID**	**Monitoring Round**																		
SD024	03 Apr 2024	0207_QC213_240403	OMP Apr 2024	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD024	03 Apr 2024	0207_SD024_240403	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0203	19.9	-	0.0199	-	-	-
SD025	09 Apr 2019	AACO_SED25_20190409	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0032	<0.0005	0.049	24.5	-	0.0168	-	-	-
SD025	25 Feb 2020	0207_QC107_200225	OMP Feb 2020	<0.0025#4	<0.0010#4	<0.0025#4	<0.0025#4	<0.0010#4	<0.0025#4	<0.0010#4	<0.0010#4	0.0093	0.488	0.0380	2.67	567	-	0.0393	-	-	-
SD025	25 Feb 2020	0207_QC207_200225	OMP Feb 2020	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	0.0081	<0.001	0.019	-	-	-	-	-	<0.002	0.011
SD025	25 Feb 2020	0207_SD025_200225	OMP Feb 2020	<0.0025#4	<0.0010#4	<0.0025#4	<0.0025#4	<0.0010#4	<0.0025#4	<0.0010#4	<0.0010#4	0.0066	0.857	0.0840	4.70	947	-	0.0565	-	-	-
SD025	23 Mar 2021	0207_SD025_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0250	13.2	-	0.0111	-	-	-
SD025	18 Mar 2022	0207_SD025_220318	OMP Apr 2022	<0.0013#4	<0.0005#4	<0.0013#4	<0.0013#4	<0.0005#4	<0.0013#4	0.0006	<0.0005	<0.0005	<0.0010#4	<0.0005	0.133	38.0	-	0.0370	-	-	-
SD025	15 Mar 2023	0207_SD025_230315	OMP Apr 2023	<0.0025#4	<0.0010#4	<0.0025#4	<0.0025#4	<0.0010#4	<0.0025#4	<0.0010#4	<0.0010#4	0.0065	0.454	0.126	6.33	547	-	0.0683	-	-	-
SD025	03 Apr 2024	0207_QC114_240403	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0042	<0.0005	0.0044	2.20	0.0448	7.09	3,470	-	1.24	-	-	-
SD025	03 Apr 2024	0207_QC214_240403	OMP Apr 2024	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	0.0061	0.12	0.034	-	-	-	-	-	<0.002	0.0074
SD025	03 Apr 2024	0207_SD025_240403	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0040	0.146	0.0257	1.39	177	-	0.0098	-	-	-
SD032	09 Apr 2019	AACO_SED32_20190409	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD032	24 Mar 2020	0207_SD032_200324	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD032	15 Apr 2021	0207_SD032_210415	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD032	13 Apr 2022	0207_SD032_220413	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD032	08 Apr 2024	0207_SD032_240408	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	0.3	-	0.0003	-	-	-
SD036	08 Apr 2019	AACO_SED36_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	1.3	-	0.0013	-	-	-
SD036	23 Mar 2020	0207_SD036_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0048	3.2	-	0.0032	-	-	-
SD036	13 Apr 2021	0207_SD036_210413	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0169	12.2	-	0.0120	-	-	-
SD036	15 Apr 2022	0207_SD036_220415	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	0.2	-	0.0002	-	-	-
SD036	15 Mar 2023	0207_SD036_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0144	12.6	-	0.0126	-	-	-
SD036	12 Apr 2024	0207_SD036_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	1.1	-	0.0011	-	-	-
SD037	08 Apr 2019	AACO_SED37_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0081	7.6	-	0.0076	-	-	-
SD037	13 Apr 2021	0207_SD037_210413	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0094	8.8	-	0.0088	-	-	-
SD037	16 Apr 2022	0207_SD037_220416	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	1.4	-	0.0014	-	-	-
SD037	15 Mar 2023	0207_SD037_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0034	3.2	-	0.0032	-	-	-
SD037	12 Apr 2024	0207_SD037_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0083	8.3	-	0.0083	-	-	-
SD038	09 Apr 2019	AACO_SED38_20190409	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0024	2.1	-	0.0021	-	-	-
SD038	23 Mar 2020	0207_SD038_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.6	-	0.0006	-	-	-
SD038	13 Apr 2021	0207_SD038_210413	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	1.6	-	0.0016	-	-	-
SD038	14 Apr 2022	0207_QC103_220414	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0012	1.2	-	0.0012	-	-	-
SD038	14 Apr 2022	0207_QC203_220414	OMP Apr 2022	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD038	14 Apr 2022	0207_SD038_220414	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	0.7	-	0.0007	-	-	-
SD038	15 Mar 2023	0207_SD038_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0021	2.1	-	0.0021	-	-	-
SD038	12 Apr 2024	0207_SD038_240412	OMP Apr 2024	<0.0010#4	<0.0004#4	<0.0010#4	<0.0010#4	<0.0004#4	<0.0010#4	<0.0004#4	<0.0010#4	<0.0010#4	<0.0010#4	<0.0010#4	0.0017	1.7	-	0.0017	-	-	-
SD040	09 Apr 2019	AACO_SED40_20190409	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD040	23 Mar 2020	0207_QC110_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD040	23 Mar 2020	0207_QC210_200323	OMP Apr 2020	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD040	23 Mar 2020	0207_SD040_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD040	12 Apr 2021	0207_QC141_210412	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD040	12 Apr 2021	0207_QC241_210412	OMP Apr 2021	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD040	12 Apr 2021	0207_SD040_210412	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	0.4	-	0.0004	-	-	-

				PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums					PFAS	
				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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0001	0.0005	0.0001	0.0001	0.0002	0.2	0.0001	0.0001	0.0001	0.002	0.005
Location Code	**Date**	**Field ID**	**Monitoring Round**																		
SD040	18 Mar 2022	0207_SD040_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	0.2	-	0.0002	-	-	-
SD040	19 Apr 2023	0207_SD040_230419	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD040	12 Apr 2024	0207_SD040_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	-	<0.0002	-	-	-
SD045	24 Mar 2020	0207_SD045_200324	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	0.4	-	0.0004	-	-	-
SD045	20 Apr 2021	0207_SD045_210420	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0099	9.2	-	0.0080	-	-	-
SD045	13 Apr 2022	0207_SD045_220413	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.5	-	0.0005	-	-	-
SD045	08 Apr 2024	0207_SD045_240408	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	0.8	-	0.0008	-	-	-
SD070	09 Apr 2019	AACO_SED70_20190409	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	0.4	-	0.0004	-	-	-
SD070	23 Mar 2020	0207_SD070_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	0.2	-	0.0002	-	-	-
SD070	15 Apr 2021	0207_SD070_210415	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	<0.2	-	<0.0002	-	-	-
SD070	16 Apr 2022	0207_SD070_220416	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.6	-	0.0006	-	-	-
SD070	15 Mar 2023	0207_SD070_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0011	1.1	-	0.0011	-	-	-
SD070	12 Apr 2024	0207_SD070_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0011	1.1	-	0.0011	-	-	-
SD081	06 Apr 2020	0207_SED024_200406	OMP Apr 2020	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	<0.0013[#4]	<0.0005[#4]	<0.0013[#4]	<0.0005[#4]	<0.0005	<0.0005	<0.0005	<0.0005	0.0044	4.4	-	0.0044	-	-	-
SD081	18 Mar 2021	0207_SED024_210318	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0011[#4]	0.0027	<0.0005	<0.0005	<0.0005	<0.0005	0.0753	69.9	-	0.0685	-	-	-
SD081	07 Feb 2022	0207_QC101_220207	OMP Feb 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0117	11.5	-	0.0115	-	-	-
SD081	07 Feb 2022	0207_QC201_220207	OMP Feb 2022	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.05	<10	<0.005	<0.005	<0.005	-	-
SD081	07 Feb 2022	0207_SD081_220207	OMP Feb 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0136	13.2	-	0.0132	-	-	-
SD081	31 Mar 2023	0207_SD024_230331	OMP Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SD081	19 Mar 2024	0207_SD081_240319	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	0.0273	24.3	-	0.0234	-	-	-
SD083	08 Apr 2020	0207_QC102_200408	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0168	0.0014	0.186	45.4	-	0.0084	-	-	-
SD083	08 Apr 2020	0207_QC202_200408	OMP Apr 2020	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	0.025	<0.005	0.2678	43.8	0.0188	0.012	0.0188	-	-
SD083	08 Apr 2020	0207_SED025_200408	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0009	0.0273	0.0019	0.277	65.4	-	0.0121	-	-	-
SD083	18 Mar 2021	0207_SED025_210318	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	0.0008	0.0081	0.0008	0.176	40.7	-	0.0083	-	-	-
SD083	07 Feb 2022	0207_SD083_220207	OMP Feb 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	<0.0005	<0.0005	0.0043	0.0010	0.0807	24.8	-	0.0169	-	-	-
SD083	19 Mar 2024	0207_SD083_240319	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0009	<0.0005	<0.0005	0.0229	0.0054	0.208	57.2	-	0.0285	-	-	-
SD102	08 Apr 2019	AACO_SED102_20190408	OMP Apr 2019	<0.0025[#4]	<0.001[#4]	<0.0025[#4]	<0.0025[#4]	<0.001[#4]	<0.0025[#4]	<0.001[#4]	<0.001[#4]	<0.001[#4]	<0.001[#4]	<0.001[#4]	0.0849	84.9	-	0.0824	-	-	-
SD102	23 Mar 2020	0207_SD102_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0057	3.9	-	0.0039	-	-	-
SD102	13 Apr 2021	0207_QC144_210413	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0045	3.1	-	0.0031	-	-	-
SD102	13 Apr 2021	0207_QC244_210413	OMP Apr 2021	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD102	13 Apr 2021	0207_SD102_210413	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0147	13.5	-	0.0135	-	-	-
SD102	16 Apr 2022	0207_SD102_220416	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	1.9	-	0.0019	-	-	-
SD102	15 Mar 2023	0207_QC101_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0153	15.1	-	0.0151	-	-	-
SD102	15 Mar 2023	0207_QC201_230315	OMP Apr 2023	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD102	15 Mar 2023	0207_SD102_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0097	8.9	-	0.0089	-	-	-
SD102	12 Apr 2024	0207_SD102_240412	OMP Apr 2024	<0.0010[#4]	<0.0004[#4]	<0.0010[#4]	<0.0010[#4]	<0.0004[#4]	<0.0010[#4]	<0.0004[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	<0.0010[#4]	0.0192	17.5	-	0.0175	-	-	-
SD105	08 Apr 2019	AACO_SED105_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0109	9.4	-	0.0094	-	-	-
SD105	23 Mar 2020	0207_SD105_200323	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0078	5.9	-	0.0054	-	-	-
SD105	13 Apr 2021	0207_SD105_210413	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0204	18.3	-	0.0161	-	-	-
SD105	15 Apr 2022	0207_SD105_220415	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0053	2.2	-	0.0022	-	-	-
SD105	15 Mar 2023	0207_SD105_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0142	11.9	-	0.0119	-	-	-
SD105	12 Apr 2024	0207_SD105_240412	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0093	7.9	-	0.0077	-	-	-
SD106	09 Apr 2019	AACO_SED106_20190409	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0043	4.1	-	0.0041	-	-	-

				PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums					PFAS	
				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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR				0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0002	0.0001	0.0005	0.0001	0.0001	0.0002	0.2	0.0001	0.0001	0.0001	0.002	0.005
Location Code	**Date**	**Field ID**	**Monitoring Round**																		
SD106	25 Feb 2020	0207_SD106_200225	OMP Feb 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0475	46.2	-	0.0431	-	-	-
SD106	23 Mar 2021	0207_SD106_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	0.167	161	-	0.157	-	-	-
SD106	18 Mar 2022	0207_SD106_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0013	<0.0005	<0.0005	0.0013	<0.0005	0.328	110	-	0.106	-	-	-
SD106	19 Apr 2023	0207_SD106_230419	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0026	0.0006	0.0942	69.0	-	0.0626	-	-	-
SD106	05 Apr 2024	0207_SD106_240405	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0547	50.5	-	0.0498	-	-	-
SD107	08 Apr 2019	AACO_SED107_20190408	OMP Apr 2019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.4	-	0.0004	-	-	-
SD107	25 Feb 2020	0207_SD107_200225	OMP Feb 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0006	<0.0005	0.0185	12.0	-	0.0086	-	-	-
SD107	23 Mar 2021	0207_SD107_210323	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0335	26.0	-	0.0193	-	-	-
SD107	18 Mar 2022	0207_SD107_220318	OMP Apr 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	<0.0005	<0.0005	0.0010	<0.0005	0.0580	23.5	-	0.0223	-	-	-
SD107	15 Mar 2023	0207_SD107_230315	OMP Apr 2023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0016	<0.0005	0.0143	9.1	-	0.0073	-	-	-
SD107	03 Apr 2024	0207_QC115_240403	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	0.0013	<0.0005	0.0760	37.1	-	0.0337	-	-	-
SD107	03 Apr 2024	0207_QC215_240403	OMP Apr 2024	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001	<0.002	-	-	-	-	-	<0.002	<0.005
SD107	03 Apr 2024	0207_SD107_240403	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	0.103	48.4	-	0.0456	-	-	-
SD108	18 Mar 2021	0207_QC101_210318	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	0.0008	<0.0005	0.0202	14.3	-	0.0116	-	-	-
SD108	18 Mar 2021	0207_QC201_210318	OMP Apr 2021	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.05	<10	0.008	0.008	0.008	-	-
SD108	19 Mar 2024	0207_QC101_240319	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005[#4]	<0.0005	<0.0005	<0.0005	<0.0005	0.0492	38.4	-	0.0377	-	-	-
SD108	19 Mar 2024	0207_QC201_240319	OMP Apr 2024	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0005	<0.0001	<0.0001	0.0384	33.5	0.0305	0.0322	0.0327	-	-
SD130	08 Apr 2020	0207_SED130_200406	OMP Apr 2020	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0427	40.7	-	0.0396	-	-	-
SD130	18 Mar 2021	0207_SED130_210318	OMP Apr 2021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0167	16.4	-	0.0162	-	-	-
SD130	07 Feb 2022	0207_SD130_220207	OMP Feb 2022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005[#4]	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	0.0632	61.8	-	0.0614	-	-	-
SD130	19 Mar 2024	0207_SD130_240319	OMP Apr 2024	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0089	8.9	-	0.0089	-	-	-

Comments

#1 ESDAT Combined with Non-Detect Multiplier of 0.5. Some Analytes are missing from this
#2 ESDAT Combined. Some Analytes are missing from this Combined Compound.
#3 ESDAT Combined with Non-Detect Multiplier of 0.5.
#4 Reported Analyte LOR is higher than Requested Analyte LOR
#5 Calculated manually
#6 Quantification of linear and branched isomers has been conducted as a single total respon
#7 Quantification of linear and branched isomers has been conducted as a single total respon

Locations where new maximums were recorded
Locations where new minimums were recorded

Appendix B
Table 6
Mann-Kendall Statistical Analysis of Groundwater Wells

Department of Defence
Swartz Barracks

		PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids												PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums		
Site	Location Code	Perfluorobutane sulfonic acid (PFBS) (µg/L)	Perfluorodecanesulfonic acid (PFDS) (µg/L)	Perfluoroheptane sulfonic acid (PFHpS) (µg/L)	Perfluorooctane sulfonic acid (PFOS) (µg/L)	Perfluoropentane sulfonic acid (PFPeS) (µg/L)	Perfluorononanesulfonic acid (PFNS) (µg/L)	Perfluorohexane sulfonic acid (PFHxS) (µg/L)	Perfluorobutanoic acid (PFBA) (µg/L)	Perfluorodecanoic acid (PFDA) (µg/L)	Perfluorododecanoic acid (PFDoDA) (µg/L)	Perfluoroheptanoic acid (PFHpA) (µg/L)	Perfluorohexanoic acid (PFHxA) (µg/L)	Perfluorononanoic acid (PFNA) (µg/L)	Perfluorooctanoic acid (PFOA) (µg/L)	Perfluoropentanoic acid (PFPeA) (µg/L)	Perfluorotetradecanoic acid (PFTeDA) (µg/L)	Perfluorotridecanoic acid (PFTrDA) (µg/L)	Perfluoroundecanoic acid (PFUnDA) (µg/L)	Perfluoro-n-hexadecanoic acid (PFHxDA) (µg/L)	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (µg/L)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) (µg/L)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (µg/L)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (µg/L)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) (µg/L)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE) (µg/L)	Perfluorooctane sulfonamide (FOSA) (µg/L)	4:2 Fluorotelomer sulfonic acid (4:2 FTS) (µg/L)	6:2 Fluorotelomer Sulfonate (6:2 FTS) (µg/L)	8:2 Fluorotelomer sulfonic acid (8:2 FTS) (µg/L)	10:2 Fluorotelomer sulfonic acid (10:2 FTS) (µg/L)	PFAS (Sum of Total) (µg/L)	Sum of WA DWER PFAS (n=10)* (ug/L)	Sum of PFHxS and PFOS (µg/L)
0207	MW003	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW019	NT	NT	NT	TUp	NT	-	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp	TUp	TUp
0207	MW021	TUp	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	TUp	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW022	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW032	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW038	TUp	NT	NT	TUp	TUp	-	TUp	NT	NT	NT	NT	NT	NT	NT	TUp	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp	TUp	TUp
0207	MW056	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW084	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW113	NT	NT	NT	TDn	TDn	-	TDn	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW114	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW118	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW122	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW132	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW134	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW147	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW149	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW151	NT	NT	NT	TUp	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp	TUp	TUp
0207	MW157	NT	NT	NT	TDn	NT	-	TDn	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW167	TDn	NT	TDn	TDn	TDn	-	TDn	NT	NT	NT	TDn	TDn	NT	TDn	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW171	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0207	MW172	NT	NT	NT	NT	NT	-	NT	TUp	NT	NT	NT	NT	NT	NT	TUp	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW173	NT	NT	TDn	TDn	NT	NT	TDn	NT	NT	NT	TDn	NT	TDn	TDn	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	NT	TDn	TDn	TDn
0207	MW174	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW178	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	NT
0207	MW178	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW179	TUp	NT	TUp	TUp	TUp	NT	NT	NT	NT	NT	TUp	NT	NT	TUp	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW187	TDn	NT	TDn	NT	TDn	-	TDn	NT	NT	NT	TDn	TDn	NT	TDn	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW189	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW191	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW193	TDn	NT	TDn	TDn	NT	-	TDn	TUp	NT	NT	TDn	TDn	NT	TDn	TDn	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW198	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	TDn	NT	TDn	NT	NT	NT	NT	NT
0207	MW199	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW201	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT	TDn	NT	TUp	TUp	NT
0207	MW202	NT	NT	TDn	NT	TDn	-	TDn	NT	NT	NT	TDn	NT	NT	NT	TDn	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW203	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT
0207	MW204	NT	NT	TUp	TUp	NT	NT	NT	NT	NT	NT	TUp	NT	NT	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp	TUp	TUp
0207	MW205	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW206	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	NT
0207	MW207	NT	NT	NT	TUp	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp
0207	MW221	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW222	TDn	NT	TDn	NT	TDn	-	TDn	NT	NT	NT	TDn	TDn	TDn	TDn	TDn	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT	TDn	TDn	TDn

Appendix B
Table 6
Mann-Kendall Statistical Analysis of Groundwater Wells

Department of Defence
Swartz Barracks

		PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums		
Site	Location Code	Perfluorobutane sulfonic acid (PFBS) (µg/L)	Perfluorodecanesulfonic acid (PFDS) (µg/L)	Perfluoroheptane sulfonic acid (PFHpS) (µg/L)	Perfluorooctane sulfonic acid (PFOS) (µg/L)	Perfluoropentane sulfonic acid (PFPeS) (µg/L)	Perfluorononanesulfonic acid (PFNS) (µg/L)	Perfluorohexane sulfonic acid (PFHxS) (µg/L)	Perfluorobutanoic acid (PFBA) (µg/L)	Perfluorodecanoic acid (PFDA) (µg/L)	Perfluorododecanoic acid (PFDoDA) (µg/L)	Perfluoroheptanoic acid (PFHpA) (µg/L)	Perfluorohexanoic acid (PFHxA) (µg/L)	Perfluorononanoic acid (PFNA) (µg/L)	Perfluorooctanoic acid (PFOA) (µg/L)	Perfluoropentanoic acid (PFPeA) (µg/L)	Perfluorotetradecanoic acid (PFTeDA) (µg/L)	Perfluorotridecanoic acid (PFTrDA) (µg/L)	Perfluoroundecanoic acid (PFUnDA) (µg/L)	Perfluoro-n-hexadecanoic acid (PFHxDA) (µg/L)	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (µg/L)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) (µg/L)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (µg/L)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (µg/L)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) (µg/L)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE) (µg/L)	Perfluorooctane sulfonamide (FOSA) (µg/L)	4:2 Fluorotelomer sulfonic acid (4:2 FTS) (µg/L)	6:2 Fluorotelomer Sulfonate (6:2 FTS) (µg/L)	8:2 Fluorotelomer sulfonic acid (8:2 FTS) (µg/L)	10:2 Fluorotelomer sulfonic acid (10:2 FTS) (µg/L)	PFAS (Sum of Total) (µg/L)	Sum of WA DWER PFAS (n=10)* (ug/L)	Sum of PFHxS and PFOS (µg/L)
0207	MW223	TDn	NT	NT	NT	TDn	-	TDn	TUp	NT	NT	TUp	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT
0207	MW229	NT	NT	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp	TUp	TUp
0207	MW230	TDn	TDn	NT	NT	TDn	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	NT
0207	MW232	TUp	NT	NT	NT	TUp	-	TUp	TUp	TDn	NT	NT	TUp	TDn	TUp	TUp	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW233	TDn	NT	NT	TDn	TDn	NT	TDn	NT	NT	NT	TDn	TDn	NT	TDn	TDn	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW235	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn
0207	MW236	NT	NT	TDn	TDn	NT	-	NT	NT	NT	NT	NT	TDn	NT	TDn	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn
0207	MW241	TDn	NT	NT	NT	TDn	-	TDn	NT	NT	NT	TDn	TDn	NT	TDn	TDn	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW242	NT	NT	NT	TDn	NT	-	TDn	NT	NT	NT	NT	NT	NT	TDn	TDn	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW245	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn
0207	MW249	NT	NT	NT	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW252	TDn	NT	TDn	TDn	TDn	NT	TDn	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW253	TDn	NT	TDn	NT	TDn	-	TDn	TDn	NT	NT	TDn	TDn	NT	TDn	TDn	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	TDn
0207	MW254	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW255	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW257	NT	NT	NT	NT	NT	-	TDn	NT	NT	NT	NT	TDn	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW262	TUp	NT	NT	NT	TUp	-	NT	NT	NT	NT	NT	TUp	NT	TUp	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW264	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW265	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW266	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW267	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW268	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW269	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW270	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW271	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW272	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW273	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW274	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW275	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW276	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn
0207	MW278	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW279	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW280	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW281	NT	NT	NT	NT	TDn	-	NT	NT	NT	NT	TDn	TDn	NT	TDn	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT
0207	MW282	NT	NT	NT	TUp	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW283	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW285	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW288	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW289	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW290	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW291	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT	TDn	TDn	NT

Appendix B
Table 6
Mann-Kendall Statistical Analysis of Groundwater Wells

Department of Defence
Swartz Barracks

		PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums		
Site	Location Code	Perfluorobutane sulfonic acid (PFBS) (µg/L)	Perfluorodecanesulfonic acid (PFDS) (µg/L)	Perfluoroheptane sulfonic acid (PFHpS) (µg/L)	Perfluorooctane sulfonic acid (PFOS) (µg/L)	Perfluoropentane sulfonic acid (PFPeS) (µg/L)	Perfluorononanesulfonic acid (PFNS) (µg/L)	Perfluorohexane sulfonic acid (PFHxS) (µg/L)	Perfluorobutanoic acid (PFBA) (µg/L)	Perfluorodecanoic acid (PFDA) (µg/L)	Perfluorododecanoic acid (PFDoDA) (µg/L)	Perfluoroheptanoic acid (PFHpA) (µg/L)	Perfluorohexanoic acid (PFHxA) (µg/L)	Perfluorononanoic acid (PFNA) (µg/L)	Perfluorooctanoic acid (PFOA) (µg/L)	Perfluoropentanoic acid (PFPeA) (µg/L)	Perfluorotetradecanoic acid (PFTeDA) (µg/L)	Perfluorotridecanoic acid (PFTrDA) (µg/L)	Perfluoroundecanoic acid (PFUnDA) (µg/L)	Perfluoro-n-hexadecanoic acid (PFHxDA) (µg/L)	N-Ethyl perfluorooctane sulfonamide (EtFOSA) (µg/L)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA) (µg/L)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE) (µg/L)	N-Methyl perfluorooctane sulfonamide (MeFOSA) (µg/L)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA) (µg/L)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE) (µg/L)	Perfluorooctane sulfonamide (FOSA) (µg/L)	4:2 Fluorotelomer sulfonic acid (4:2 FTS) (µg/L)	6:2 Fluorotelomer Sulfonate (6:2 FTS) (µg/L)	8:2 Fluorotelomer sulfonic acid (8:2 FTS) (µg/L)	10:2 Fluorotelomer sulfonic acid (10:2 FTS) (µg/L)	PFAS (Sum of Total) (µg/L)	Sum of WA DWER PFAS (n=10)* (ug/L)	Sum of PFHxS and PFOS (µg/L)
0207	MW292	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW293	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW294	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW295	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	TDn	NT	NT	TDn	TDn	NT
0207	MW297	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
0207	MW299	TUp	NT	NT	TUp	TUp	-	TUp	TUp	NT	NT	TUp	TUp	NT	TUp	TUp	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp	TUp	TUp
0207	MW300	TDn	NT	NT	TUp	TDn	-	TDn	NT	NT	NT	TDn	TDn	NT	NT	TDn	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	NT
0207	MW313	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	-	-
0207	MW329	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	-	-
0207	MW401S	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	-	-
0207	MW402S	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	-	-
0207	MW559	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0207	MW560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0207	MW561	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0207	MW562	TDn	NT	NT	NT	NT	-	NT	TDn	NT	NT	NT	NT	NT	NT	TDn	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TDn	TDn	NT
0207	MW563	NT	NT	NT	TUp	NT	-	TUp	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	TUp

NT	Not Trending
Tup	Trending Up
TDn	Trending Down
	Locations no longer part of current OMP

Appendix C

SAQP

230 Harbour Drive,
Coffs Harbour, New South Wales 2450
Australia
ghd.com

Our ref: 12638013

27 September 2024

[redacted]
Department of Defence

Swartz Barracks – Ongoing Monitoring Program Sampling Analysis and Quality Plan Addendum

Dear [redacted]

1. Introduction

GHD Pty Ltd (GHD) have been engaged by the Department of Defence (Defence) as lead consultant at Swartz Barracks (the site) to assist Defence in implementing their per- and poly-fluoroalkyl substances (PFAS) Management Area Plan (PMAP[1]). Part of this engagement includes conducting ongoing monitoring of groundwater, surface water and sediment in line with their Ongoing Monitoring Plan (OMP[1]).

This document has been prepared by GHD for Department of Defence for the intended purpose, as made known to GHD.

2. Existing OMP Sampling and Analysis Quality Plan

GHD was provided with the Sampling and Analysis Quality Plan (SAQP[2]) implemented during the April 2024 (comprehensive) round of monitoring at the site, which also includes the requirements for the October 2024 (targeted) sampling round. GHD will conduct the October 2024 targeted groundwater monitoring round in accordance with the SAQP provided, noting the points in Section 3.

3. October 2024 OMP

GHD have conducted a preliminary review of the SAQP provided and identified some data gaps and inconsistencies between the SAQP[2], the OMP[1] and AECOMs reports. Additionally, Defence have requested GHD also conduct sampling at locations recently installed by JBS&G. Table 1 outlines deviations from the SAQP and clarifications that GHD will implement during the October 2024 monitoring round, noting that the review conducted was preliminary in nature only and a comprehensive review and update of the OMP will be undertaken at a later date.

GHD has prepared this document, in part, on the basis of information provided by Department of Defence and others who provided information to GHD (including Government authorities), which GHD has verified or checked to the extent required by the agreed scope of work.

[1] Department of Defence. (2019). *Army Aviation Centre Oakey, PFAS Management Area Plan (PMAP).*
[2] AECOM (2024). *PFAS OMP – Swartz Barracks Sampling and Analysis Quality Plan.*

Table 1 GHD's approach to the October 2024 OMP

SAQP Requirement or Data Gap	GHD Approach
Groundwater sampling at 47 monitoring wells and bores.	GHD will also be sampling 17 additional wells recently installed by JBS&G following the same methodology as the SAQP. The additional on-site wells are shown in Attachment 1. There will likely be some deviations due to access restrictions with private stakeholders. GHD has also identified that two of the properties have changed ownership in the last 2 years and limited information on Consultation Manager has made contacting these stakeholders difficult. Letters will be dropped in the mailboxes of these residents during the October OMP round but sampling may not be undertaken.
Bore water samples are to be collected directly from the tap to collect the "first flush".	For the October 2024 sampling round, no decontamination procedures will be implemented and "first flush" sampling will be undertaken for consistency, however this will be considered during the OMP review and update.
Hydrasleeve deployment	The SAQP does not provide methodology with regards to hydrasleeves deployment for prior to sampling. GHD will deploy the hydrasleeves at least one week prior to sampling for the October OMP round and upon completion of the October sampling, all hydrasleeves required for the April 2025 OMP will be deployed. This is in accordance with the recently published online guidance on passive sampling by ITRC[3] and GHD's standard operating procedures.
Sample analysis – All primary samples will be submitted for PFAS extended suite using the standard levels of detection. The LOR is listed as 0.002 – 0.1 µg/L.	While the SAQP states that samples should be analysed for the PFAS extended suite, the results presented in the AECOM reports are for the standard PFAS suite for previous sampling rounds. Given that the primary PFAS of concern are covered with the standard PFAS suite, GHD will also adopt the standard PFAS suite. Samples will be analysed using standard levels of detection.
QC samples – the SAQP only outlines requirements for duplicates and rinsates. There is no requirement for field blanks or trip blanks to be collected.	GHD will collect QC samples as follows, as this is considered best practice, and will be consistent across all SAQPs and sampling GHD conducts: - Duplicates – 1 in 10 samples - Triplicates – 1 in 10 samples - Rinsates – 1 per day of sampling off reuseable equipment, such as an interface probe - Trip blanks – 1 per laboratory batch - Field blanks – as required on new equipment

Regards

[redacted]

Attachments – Figures

[3] ITRC (Interstate Technology & Regulatory Council). 2024. *Passive Sampling Technology Update* PSU-1. Washington, D.C.: Interstate Technology & Regulatory Council, PSU Team. **www.itrcweb.org**

Attachments

Attachment 1

Figures

230 Harbour Drive,
Coffs Harbour, New South Wales 2450
Australia
ghd.com



Figure 1 *AECOM SAQP on-site sampling locations*



Figure 2 *On-site sampling locations including the additional wells that GHD will sample in the October 2024 OMP round*

Prepared for
Department of Defence
ABN: 68 706 814 312

AECOM

PFAS OMP- Swartz Barracks Sampling and Analysis Quality Plan

31-Jan-2024
PFAS Ongoing Monitoring Plan
Doc No. 60612563_PL03_8_240131

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Delivering a better world

PFAS OMP- Swartz Barracks Sampling and Analysis Quality Plan

Client: Department of Defence

ABN: 68 706 814 312

Prepared by

AECOM Australia Pty Ltd
Turrbal and Jagera Country, Level 8, 540 Wickham Street, PO Box 1307, Fortitude Valley QLD 4006, Australia
T +61 7 3056 4800 www.aecom.com
ABN 20 093 846 925

31-Jan-2024

Job No.: 60612563

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

Quality Information

Document PFAS OMP- Swartz Barracks Sampling and Analysis Quality Plan

Ref 60612563

Date 31-Jan-2024

Prepared by [redacted]

Reviewed by [redacted]

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
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B	18 October 2019	Draft		
0	3 March 2020	Final		
1	07 September 2020	Final		
2	11 February 2021	Final		
3	2 March 2022	Final		
4	14 March 2022	Final		
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8	31-Jan-2024	Final		[redacted]

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1.0 Introduction

1.1 Preamble

AECOM Australia Pty Ltd (AECOM) has prepared this Sampling and Analysis Quality Plan (SAQP) for the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) at **Swartz Barracks** (formerly known as Army Aviation Centre Oakey) (the 'site') and the **Swartz Barracks Management Area** in the **South Queensland Region**. The SAQP also includes a satellite site of Swartz Barracks (Brymaroo Satellite Site, hereafter Brymaroo) located approximately 22 km northwest of the Swartz Barracks.

The SAQP supports the PFAS OMP which was included in the Swartz Barracks PFAS Management Area Plan (PMAP) (Defence, 2019), here-in referred to as OMP.

The purpose of the OMP program is to collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration, transport (migration pathways and flow) and transformation of PFAS at the site and Swartz Barracks Management Area. The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

1.2 SAQP Objectives

The objectives of this SAQP are to:

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

1.3 Scope of Works

To meet the project objectives, the following scope of works were proposed as per the OMP (Defence, 2019):

- Annual comprehensive sampling event in March/April 2020, March/April 2021, March/April 2022, March/April 2023 and March/April 2024 including:
    - groundwater sampling of 47 on-site groundwater monitoring wells (34 at Swartz Barracks and 13 at Brymaroo) and 49 off-site groundwater monitoring wells and bores
    - co-located sediment and surface water sampling at six on-site and 16 off-site sampling locations
- Targeted sampling event in October 2019, October 2020, October 2021, October 2022 and October 2023 including groundwater sampling of 34 on-site groundwater monitoring wells (at Swartz Barracks) and 14 off-site groundwater monitoring wells and bores.
- Preparation of reports including a sampling event factual report (following each comprehensive and targeted sampling event) and interpretative ongoing monitoring reports following the completion of each 12-month sampling period.

Since the OMP was issued in 2019 there have been some minor changes in the number of groundwater sampling locations due to property owners declining permission or monitoring wells being destroyed or lost. **Section 4.3.2** to **Section 4.3.4** provides the updated list of sampling locations.

1.4 Guidelines and Legislation

The SAQP has been developed with reference to the following guidelines and legislation:

- PFAS National Environmental Management Plan (NEMP), Heads of Environmental Protection Agencies (HEPA), version 2.0 2020
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM), National Environment Protection Council (NEPC), 2013
- Department of Defence, Routine Environment Water Quality Monitoring Manual, 2016
- Department of Defence, Contamination Management Manual (DCMM), 2018 amended 2021
- Department of Health, Health Based Guidance Values for PFAS for use in site investigations in Australia. 2019
- National Health and Medical Research Council (NHMRC), Guidance on PFAS in Recreational Water. August 2019
- Standards Australia 1998. AS/NZ 5667:1998 Water Quality – Sampling
- Australian and New Zealand Guidelines, 2018. Australian and New Zealand Guidelines for Fresh and Marine Water Quality
- Environmental Protection Policy, (Water and Wetland Biodiversity), 2019.

2.0 Site Identification and Conceptual Site Model

2.1 The Base and Management Area

Swartz Barracks was constructed in 1943, initially as a training facility and overflow aircraft maintenance depot for RAAF Base Amberley. The Site currently operates as the Army's helicopter training school for pilots and aviation technicians and is also home to a Republic of Singapore Airforce helicopter squadron. The northern part of Swartz Barracks is the airfield, while the southern part of Swartz Barracks comprises support services, buildings and infrastructure. Approximately 290 hectares of the Site are leased for agriculture in the western portion of Swartz Barracks.

Brymaroo is approximately 266 hectares in size and is used for training in emergency landings and fire hazard training. AFFF containers are present for use in emergencies. No known training exercises using AFFF are known. The key objective of an environmental investigation conducted between 2016 and 2018 was to characterise potential environmental impacts from the historical use of AFFF.

The Swartz Barracks Management Area was established in 2017 and comprises three zones:

- **Management Zone 1:** this zone is located immediately to the south and southwest of Swartz Barracks. It has the highest perfluorooctanesulfonic acid (PFOS) + perfluorohexanesulfonic acid (PFHxS) concentrations in groundwater in the Management Area given its closer proximity to the Swartz Barracks and potential downwards migration of PFAS from surface water in drainage channels 1 and 2.
- **Management Zone 2:** this zone is located further to the south and southwest of the Swartz Barracks. It has higher PFOS+PFHxS concentrations in groundwater in comparison with Management Zone 3 as a result of a combination of impacted groundwater flowing to the south and west from the Site together with downwards migration of PFAS-impacted surface water from the drains leaving the Site.
- **Management Zone 3:** located outside Management Zone 1 and Zone 2 and within the remainder of the Management Area. PFAS was not detected by the laboratory in the majority of groundwater samples collected from groundwater monitoring bores in this Management Zone.

Defence has issued precautionary advice for residents within each management zone.

2.2 Conceptual Site Model

The conceptual site models (CSM) for Swartz Barracks and Brymaroo are presented in detail in the OMP (Defence, 2019) which summarises the linkages between sources, pathways and receptors. The CSM is reviewed annually, as part of the ongoing monitoring report (OMR). The most recent OMR was the 2022 Ongoing Monitoring Interpretive Report, which was issued in December 2023 (AECOM, 2023b).

3.0 Data Quality Assessment

3.1 Data Quality Objectives

The amended 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 1 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

Defence and State agencies require up-to-date data to enable informed risk management decisions to protect human health and the environment, given that elevated concentrations of PFAS have been identified in environmental media.

Defence required an understanding of the holistic effect of PFAS management response activities that have and will be implemented.

The data collected by this SAQP will provide a detailed dataset that can be used to assist with assessment of temporal changes in PFAS concentrations in groundwater and surface water / sediment on- and off-site. This will facilitate refinement of the CSM, allow update of the human health and ecological risk assessment and inform management decisions by Defence and government agencies.

3.1.2 Step 2 – Identify the Goal of the Study

The overall goal of the study is to establish a systematic routine groundwater and surface water / sediment sampling and analysis program to provide current and ongoing information on the distribution and migration of PFAS contaminants of potential concern in groundwater and surface water / sediment 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 sediment 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 investigations
- meteorological data including rainfall
- previous and new data collected during the residential sampling program where permission to use the data has been granted by landowners
- groundwater, surface water and sediment data collected and analysed for PFAS, as part of the SAQP
- groundwater and surface water elevation data
- statistical analysis to identify trends
- advances in laboratory analytical approaches and changes in regulatory requirements.
- adopted assessment criteria for groundwater, sediment and surface water.
- sampling event factual reports (e.g. AECOM, 2020a,b, 2021b,c, 2022b, 2023a,b, 2024a)
- ongoing monitoring interpretive reports (AECOM, 2021d, 2022a, 2023c).
-

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 the site, the Management Area and Brymaroo (refer to **Appendix A**)
- The sampling completed as part of the SAQP includes groundwater, surface water and sediment, at the frequencies defined in **Section 4.3**. In addition, ad hoc sampling for biota may also be required
- The monitoring will be long term and potentially ongoing.

The SAQP will cover the implementation period to the extent required by specific characteristics of the Base and surrounds, and behaviour of the plume, measured against specified data trends.

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.
- Analytical method selection for PFAS is based on achieving appropriate laboratory 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 is reported at a concentration that is above drinking water guideline in groundwater, then it will be considered that further assessment is required and / or notification.
- If the PFAS is reported at a concentration that is inside a trigger value or acceptable range, then it will be considered whether monitoring is continued or reduced, this assessment will be undertaken after two years of monitoring.

The decision on the acceptance of the analytical data will 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 site.
- **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 (Defence, 2019) 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 site. To address this, the OMP outlines minimum numbers of samples proposed to be collected from each media.
- As such, there may be limitations in the data if aspects of the OMP cannot be implemented. Some examples of this scenario include but are not limited to:
    - Proposed surface water sample locations may be dry at the time of sampling
    - Proposed groundwater well locations are damaged or destroyed and therefore cannot be sampled
    - Proposed samples are not collected due to access being restricted to a given location.
- Limitations in ability to acquire useful and representative information from the data collected. The data are proposed to be collected from multiple locations and sample media. Some examples of this scenario include:
    - Some of the data are proposed to be collected from landholder bores, which are not purpose-built for groundwater monitoring. In some cases, there is limited information on the bore

construction, and the likely presence of dedicated pumps or windmills may prevent groundwater depths being accurately recorded while also preventing groundwater being sampled using low flow techniques.

- 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 described in **Section 1.2** 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 DCMM (July 2018, Amended 2021)
  - 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*
- 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 period 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; and
- 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 2**.

Table 2 Acceptance Criteria for Data Quality Indicators for Sample Analysis

Data Quality Indicators	Acceptance Criteria
Water and Sediment Samples	
Rinsates (where sampling equipment is reused)	Less than the laboratory LOR.
Field duplicates/Inter-lab duplicates	The relative percentage distributions (RPDs) will be assessed as acceptable if less than or equal to 30% as per the NEPM Schedule B3. Where the results shows 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%; and • Heterogeneous materials are encountered.
Laboratory duplicates	RPDs less than: • 20% for high level laboratory duplicates (i.e. >20 x LOR); and • 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.
Method blanks	Less than the laboratory LOR.
Laboratory control samples	Recoveries between laboratories specified range for each particular analyte / analytical suite.

4.0 Sampling Location Rationale and Methodology

4.1 OMP

The OMP (Defence, 2019) presents an overview of specific monitoring works to be undertaken and provides the basis for the preparation of this SAQP. This scope of work presented in this SAQP is consistent with that detailed in the OMP[1] (Defence, 2019), with the exception of those points of deviation presented in **Section 4.15**.

4.2 Proposed Schedule

4.2.1 Sampling Events

Groundwater, surface water and sediment sampling from across the Management Area will be performed biannually as part of a comprehensive sampling event in March/April and a targeted sampling event in October. The proposed schedule of fieldworks is presented in **Table 3** below.

Table 3 Proposed Fieldwork Schedule

Sampling Round No.	Description of works	Proposed Schedule
1	Targeted groundwater sampling	October 2019
2	Comprehensive groundwater, surface water and sediment sampling	March/April 2020
3	Targeted groundwater sampling	October 2020
4	Comprehensive groundwater, surface water and sediment sampling	March/April 2021
5	Targeted groundwater sampling	October 2021
6	Comprehensive groundwater, surface water and sediment sampling	March/April 2022
7	Targeted groundwater sampling	October 2022
8	Comprehensive groundwater, surface water and sediment sampling	March/April 2023
9	Targeted groundwater sampling	October 2023
10	Comprehensive groundwater, surface water and sediment sampling	March/April 2024

4.3 Sample Location Rationale

4.3.1 Groundwater Sampling Locations

Groundwater monitoring will be undertaken on selected monitoring wells and residential bores. The rationale for monitoring well selection for each area is summarised in **Table 4** below.

[1] Note that the sampling locations included in the annual comprehensive sampling event and the targeted sampling event have been revised since the PMAP was issued. This is documented in Section 4.15.

Table 4 Rationale for Groundwater Monitoring Locations

Area	Rationale
On-site (Oakey Creek Alluvium Aquifer)	• Monitor spatial and temporal variations in PFAS concentrations in groundwater concentrations up, down and cross-gradient of source areas • Assess if groundwater PFAS concentrations in bores down-gradient of the source areas change in response to management measures over time
Off-site: south of site down-hydraulic gradient of drainage channels and Oakey Creek in the Oakey Creek Alluvium aquifer	• Monitor spatial and temporal variations in PFAS concentration in the groundwater down-gradient of drainage channels and Oakey Creek • Assess if groundwater PFAS concentrations in bores to the south of the Site change in response to management measures over time • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations • Monitor groundwater adjacent to Oakey Creek to assess PFAS migrating from the drainage channels and Oakey Creek to groundwater • Monitor groundwater parallel and perpendicular to the PFAS plume to assist with understanding concentrations changes in these alignments.
Off-site: south-west of the site up- and down- hydraulic gradient of the landfill in the Oakey Creek Alluvium aquifer	• Monitor spatial and temporal variations in PFAS concentration in the groundwater up- and down gradient of the landfill • Assess if groundwater PFAS concentrations in bores to the south-west of the Site change in response to management measures over time • Monitor groundwater parallel and perpendicular to the PFAS plume to assist with understanding concentrations changes in these alignments.
Off-site: west and south-west of the site in the Oakey Creek Alluvium aquifer	• Monitor potential changes in PFAS concentrations at the plume margins to the west and south west of the Site to refine model predictions • Assess if groundwater PFAS concentrations in bores to the west and south-west of the Site change in response to management measures over time • To provide an indication if additional management measures are required for groundwater users outside the current area of PFAS contamination in groundwater • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations • Monitor groundwater parallel and perpendicular to the PFAS plume to assist with understanding concentrations changes in these alignments.
Off-site: within underlying aquifer units (Main Range Volcanics and Walloon Coal Measures) at locations the south, southwest and west of the site.	• Monitor groundwater PFAS concentrations in underlying aquifers to assess potential vertical migration of PFAS into underlying aquifers at vulnerable locations, including areas where bores have been constructed to previous standards, irrigation return flow and flooding • Monitor potential changes in PFAS concentrations to provide up to date information to users of the underlying aquifer and to refine model predictions

Area	Rationale
	• Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations.
Brymaroo (Main Range Volcanics aquifer)	• Monitor spatial and temporal variations in PFAS concentration in groundwater • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations.

Note: Off-site residential sampling locations will require the agreement of the landholder/leaseholder.

4.3.2 Groundwater Sampling Locations

The groundwater locations to be monitored as part of the annual comprehensive sampling event and targeted sampling event are provided **Table 5** below and are presented in **Figure 1** (on-site), **Figure 2** (off-site) and **Figure 4** (Brymaroo) in **Appendix A**. Sample identity numbers were changed in 2019 to be compliant with the DCMM (Defence 2021). A table showing historical and current sample identification numbers is presented in **Appendix C**.

Table 5 Groundwater sampling locations

Location		Event	Bores	No. of locations	
				Annual April	Targeted October
On-site					
Source Area Bores	Fire training area in North	A & T	MW562*, MW563*	2	2
	Former fire station in B3	A & T	MW201, MW202, MW203, MW204, MW205	5	5
	AFFF Storage Area / D20 appliance testing area	A & T	MW221, MW222, MW230, MW232	4	4
	AFFF recovery tank in F1 / hot refuel area	A & T	MW235, MW236, MW241	3	3
	AFFF recovery tank in A2 / hot refuel area	A & T	MW172, MW173	2	2
	AFFF recovery tank in S1	A & T	MW299, MW300	2	2
	AFFF Settling tank in C1	A & T	MW193, MW198, MW207, MW223, MW229	5	5
On-site Boundary Bores (Oakey Creek Alluvium)		A & T	MW167, MW174, MW178, MW179, MW187, MW189, MW233, MW242, MW245, MW249, MW252	11	11
Off-site					
Off-site Background Bores (to east/ southeast of Site)		A	MW265, MW279	2	0
South of Site and down gradient of drainage channels and Oakey Creek		A	MW267, MW268, MW270, MW278, MW292, MW294, *MW132*	7	0
Up and down gradient of landfill		A	MW280, MW281, MW282	3	0

Location	Event	Bores	No. of locations	
			Annual April	Targeted October
West and southwest of Site	A	MW255, MW257, MW262, MW266, MW272, MW274, MW276, MW283, MW285, MW296, *MW003, MW019, MW021, MW038, MW056, MW113, MW114, MW118, MW122, MW134, MW147, MW149, MW151, MW157*	24	0
	T	MW255, MW257, MW262, MW276, MW272, *MW003, MW019, MW038, MW056, MW134, MW147, MW151*	0	12
Underlying aquifers (to south, south-west and west of Site)	A	MW271, MW275, MW288, MW269, MW273, MW289, MW290, MW291, MW293, MW295, MW297	11	0
	T	MW269	0	1
Brymaroo				
On-site Bores	A	MW001, MW002, MW003, MW004, MW005, MW006, MW007, MW008, MW009, MW010, MW011, MW012, MW013	13	0

Note: *Italics* indicates residential bore
A = Annual, T = Targeted
* Monitoring wells MW562 and MW563 were installed in 2022 to replace wells MW253 and MW254 that were decommissioned in 2021 during remediation works.
Five residential bores in Oakey (MW020, MW022, MW031, MW032 and MW160) have been removed from the monitoring program as the property owners declined permission to access the bores in 2021/22.
MW264 has been removed as it is no longer accessible.

4.3.3 Surface Water Sampling Locations

The surface water sampling locations have been selected to build upon and maintain consistency with the monitoring completed during the Stage 2C Environmental Investigation (EI) (AECOM, 2017). The locations have been previously sampled several times, and continued monitoring will provide additional data to assess temporal variability. The locations to be monitored as part of the annual comprehensive sampling event (March/April) are provided in **Table 6** below and are presented on **Figure 3** in **Appendix A**. A table showing historical and current sample identification numbers is presented in **Appendix C**.

Table 6 Surface Water Sampling Locations

Area	Description	Sampling Locations	Number of Locations	Total
Creek	Oakey Creek upstream of drainage channel 3 outfall	SW032, SW040	2	11 locations
	Oakey Creek (downstream of confluence with Westbrook Creek (includes weir))	SW010, SW011, SW012, SW013, SW056	5	
	Oakey Creek (downstream confluence with Westbrook Creek)	SW004, SW059	2	
	Doctor Creek	SW043	1	
	Westbrook Creek	SW028	1	
Drainage Channel	Drainage Channel 1 (on-site)	SW065, SW066	2	11 locations
	Drainage Channel 1 (off-site)	SW026	1	
	Drainage Channel 2 (on-site)	SW024, SW025	2	
	Drainage Channel 2 (off-site)	SW009, SW027	2	
	Drainage Channel 3 (on-site)	SW019, SW021, SW063	3	
	Drainage Channel 3 (off-site)	SW057	1	

4.3.4 Sediment Sampling Locations

The sediment sampling locations have been selected to build upon and maintain consistency with the monitoring completed during the Stage 2C EI (AECOM, 2017) and are co-located with the surface water sampling locations. 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 as part of the annual comprehensive sampling event (March/April) are provided in **Table 7** below. A table showing historical and current sample identification numbers is presented in **Appendix C**.

Table 7 Sediment Sample Locations

Area	Description	Sampling Locations	Number of Locations	Total
Creek	Oakey Creek upstream of drainage channel 3 outfall	SD032, SD040	2	11 locations
	Oakey Creek (downstream of confluence with Westbrook Creek (includes weir))	SD037, SD036, SD0105, SD102, SD018	5	
	Oakey Creek (downstream confluence with Westbrook Creek)	SD038, SD045	2	
	Doctor Creek	SD007	1	
	Westbrook Creek	SD070	1	
Drainage Channel	Drainage Channel 1 (on-site)	SD106, SD022	2	11 locations
	Drainage Channel 1 (off-site)	SD015	1	
	Drainage Channel 2 (on-site)	SD024, SD010	2	
	Drainage Channel 2 (off-site)	SD013, SD011	2	
	Drainage Channel 3 (on-site)	SD016, SD025, SD107	3	
	Drainage Channel 3 (off-site)	SD017	1	

4.4 Sample Collection and Handling

4.4.1 Groundwater Sampling

The groundwater sampling methodology and schedule are presented in **Table 8**.

Table 8 Groundwater Sampling Methodology and Schedule

Item	Details
Groundwater gauging	The depth to groundwater will be measured in each monitoring well immediately prior to collection of groundwater samples.
Sample Collection Methodology	**Shallow Bores in Oakey Creek Alluvium and Deeper Bores installed in Main Range Volcanics and Walloon Coal Measures** Groundwater samples will be collected from all monitoring wells using no-purge methodology HydraSleeves™, which will be installed within the screened interval of the wells (approximately 1 m above the base of the well) for a minimum of 24 hours prior to the sampling round. Once sampling is completed, new HydraSleeves™ will be deployed at the screened interval depth in preparation for the next sampling round. **Residential Bores** Bore water samples will be collected by placing the laboratory provided sample bottle beneath the tap outlet and the tap slowly opened to collect the “first flush” of water. The residential bores are: MW003, MW019, MW021, MW038, MW056, MW113, MW114, MW118, MW122, MW132, MW134, MW147, MW149, MW151, MW157.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and equipment rinsate blank (rinsate) samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS free deionised water over the decontaminated sampling equipment.
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.
Decontamination Procedures	Non-dedicated equipment in contact with groundwater (i.e. interface probe and water quality meter probe) will be decontaminated by being cleaned with a PFAS-free detergent and PFAS-free deionised water supplied by the analytical laboratory.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The monitoring at Swartz Barracks will include two monitoring events, as detailed below: **Annual Comprehensive:** 94 monitoring wells and residential bores have been selected for the annual comprehensive sampling event (March/April). This includes 13 monitoring wells at Brymaroo. **Targeted:** 47 monitoring wells and residential bores have been selected for the targeted sampling event (October).

4.4.2 Surface Water Sampling

The surface water sampling methodology and schedule is presented in **Table 9**.

Table 9 Surface Water Sampling Methodology and Schedule

Item	Details
Sample Collection Methodology	Samples to be collected from immediately below the water surface 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 with the cap immediately applied once the container is full.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and equipment rinsate blank (rinsate) samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment.
Field Parameters	Temperature, EC, DO, ORP, pH and observations of water quality will be recorded for all samples.
Decontamination Procedures	Non-dedicated equipment in contact with groundwater (i.e. interface probe and water quality meter probe) will be decontaminated by being cleaned with a PFAS-free detergent and PFAS-free deionised water supplied by the analytical laboratory.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The surface water sampling will be conducted annually as part of the annual comprehensive event (March/April).

4.4.3 Sediment Sampling

The surface water sampling methodology and schedule are outlined in **Table 10**.

Table 10 Sediment Sampling Methodology and Schedule

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments to be collected from within the water body if possible. Sediment samples will be collected using a trenching shovel from the base of the drain (where possible), or using a Dormer Piston Sediment Sampler or a hand-grab sample using a clean pair of nitrile gloves. At each location, a new laboratory supplied container should be used for each sample.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and equipment rinsate blank (rinsate) samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The sediment sampling will be conducted annually as part of the annual comprehensive event (March/April).

4.4.4 Biota Sampling

Ad hoc biota samples may be collected at the request of Defence in accordance with the sampling methodology and schedule presented in **Table 11**.

Table 11 Biota Sampling Methodology and Schedule

Item	Details
Sample Collection Methodology	Targeting sampling of biota (e.g. aquatic biota such as fish, crayfish) may need to be conducted on an ad hoc basis. Appropriate sampling techniques will be used to collect the samples; for example gill nets or electro fishing will be used to collect fish, sample traps could be used to collect crayfish. Where required, samples will be collected by a qualified contractor holding a general fisheries permit for the collection of tissue samples. Where required to obtain sufficient sample mass for laboratory analysis, multiple specimens of the same species may need to be composited. Sampling of fish for human health assessment will require targeting of fish of consumptive size. Samples will be identified, measured, weighed, photographed and placed in a zip lock bag following euthanasia in ice slurry.
QA/QC Samples to be Collected	No QA/QC samples will be collected.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection for biota samples.
Sampling Schedule	Samples will be collected on an ad hoc basis at the request of Defence.

4.4.5 Sample Handling and Transport to Laboratory

AECOM personnel will attempt to reduce potential heterogeneity in the sample media matrix by dividing the sample collected between primary and intra-laboratory jars or bottles during sampling. All samples will be placed on ice in eskies immediately after sampling.

All samples will be kept, if possible, at or below 4°C during transit to the laboratory. Prior to sampling, assessment of the analytical holding times will be made and the sampling planned accordingly to help ensure that holding times are not breached or is minimised.

Samples will be transported to the laboratory for analytical testing under standard chain of custody (CoC) documentation. Primary and associated duplicate QA/QC samples will be analysed by ALS Brisbane. The inter-laboratory duplicate samples will be analysed by the National Measurement Institute (NMI) or Eurofins Brisbane.

4.5 Calibration

The water quality meter will be calibrated each day prior to the commencement of field activities with relevant solutions, including pH, EC and ORP. The calibration will be in accordance with manufacturers' instructions or National Association of Testing Authorities (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 field sheets and included in the Sampling Events Factual Reports.

A calibrated interface probe should be used for the gauging of the monitoring wells with a copy of the calibration certificate included in the Sampling Event Factual Reports.

4.6 Logistics

The laboratory sample containers will be collected from the laboratory prior to the commencement of fieldwork. All samples will be transported by an ALS by the field team or a supplied courier at the completion of fieldwork. All inter-laboratory duplicate samples will be couriered from ALS to the secondary laboratory under a separate CoC documentation for analysis.

4.7 Analytical Suite and Laboratory Analysis Methods

4.7.1 Laboratory NATA Accreditation Details

The laboratory is required to use NATA accredited methods based on NEPM, US EPA, Table B 15 of the US Department of Defence/Department of Energy (US DOD/DoE) and American Society for Testing and Materials (ASTM) methods as appropriate.

The primary laboratory selected for this program is ALS (NATA Accreditation Number 825). The secondary laboratories selected for this program are NMI (NATA Accreditation Number 198) and Eurofins Brisbane (NATA Accreditation Number 1261).

4.7.2 Analytical Schedule

All media sampled shall be analysed for the extended PFAS suite as outlined in **Table 12** below.

Table 12 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
	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

PFAS Group	Compound	CAS No.
	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 13** below.

Table 13 Laboratory Limits of Reporting

Sample Media	Parameter	Technique/Method Reference	LOR*
Groundwater and Surface Water	Extended PFAS Suite	LC/MS-MS	0.002 – 0.1 µg/L
Sediment	Extended PFAS Suite	LC/MS-MS	0.0002 – 0.001 mg/kg

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

4.8 Sample Nomenclature

In order to meet Defence data management requirements, a consistent sample nomenclature has been adopted for the Program. All primary samples will be labelled using the following Defence Contamination Management Manual (DCCM) naming convention:

PPPP_XX000_ZZZ_YYMMDD

[property ID]_[type of sample][THREE DIGIT sample number]_[top of sample depth]_[yearmonthday]

e.g. 0902_MW01_191015

Location types and codes are prescribed by Defence and the Site's investigation history.

Primary Sample Types/Location Codes relevant to this OMP include:

- SD = sediment – top depth required
- MW = monitoring well
- SW = surface water - no depth required

QA/QC Samples will be labelled in accordance with the following convention:

- Duplicate: PPPP_QC1XX_YYMMDD
- Triplicate: PPPP_QC2XX_YYMMDD
- Rinsate: PPPP_QC3XX_YYMMDD

4.9 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 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.

4.10 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance.

At the time of preparing this SAQP, a number of guidance documents were in circulation in Australia including:

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

The adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 14** below.

Table 14 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values presented in the PFAS NEMP, 2020 are from DoH 2017, which published final health-based guidance values for PFAS for use in site investigations in Australia. DoH utilised the TDI for PFOS and PFOA from FSANZ, 2017 and the methodology described in Chapter 6.3.3 of the National Health and Medical Research Council's (NHMRC) Australian Drinking Water Guidelines (ADWG), 2016 to determine drinking water values. *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	In August 2019, NHMRC released guidance on the assessment of PFAS in surface water. Rather than adopting an ingestion rate of 0.2 L of water per day (as per the ADWG formula), NHMRC adjusted this rate with consideration of an event frequency (150 events / year) to calculate an annual ingestion rate of 30 L per year. *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			

Pathway	Compound	Criteria	Comment / Reference
Freshwater (99% species protection values)	PFOS PFOA	0.00023 µg/L 19 µg/L	The values are from the PFAS NEMP, 2020 which endorsed the Australian and New Zealand Guidelines for Fresh and Marine Water Quality – draft default guideline values. AECOM understands that these guidelines are currently being reviewed and will consider the appropriateness of considering any future revision. 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.*

There are currently no PFAS screening criteria available in Australia for sediment.

4.11 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.

Waste water generated will be provided to the on-site groundwater treatment plant for disposal.

All consumables (i.e. HydraSleeves™, filter cartridges, general rubbish) will be bagged and placed in on-site general waste bins for disposal.

4.12 Quality Assurance/Quality Control Sampling

4.12.1 Field Duplicate and Inter-laboratory Duplicate Samples

Field duplicate (intra-laboratory) duplicate samples and split (inter-laboratory field duplicates) are to be collected and analysed at a minimum frequency of 1 in 10 primary samples.

4.12.2 Rinsate Samples

Rinsate samples are to be collected at a rate of one sample per fieldwork day or at least one rinsate sample per ten primary samples (whichever rate is lower) by pouring laboratory supplied deionised water over the decontaminated sampling equipment.

4.13 Fieldwork Documentation

4.13.1 Field Notes

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) and field water quality parameters (pH, EC, DO, ORP, temperature) will be recorded; and
- Sediment samples - comments on the morphology of the sample location, the depth, flow direction and strength of water flow (if water is present), the water and sediment/soil colour and odour, and the presence of flora and fauna. The soil/sediment types observed at each sample location will be described using the Unified Soil Classification System (USCS).

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 data capture ('EDCA') system will be utilized by field staff to minimise potential data recording errors and allow on-the-spot identification of potentially erroneous data in comparison to historical data.

4.13.2 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 ALS 'Compass' sample management application to streamline sample labelling and CoC creation to ensure compliant sample IDs are used in the field.

4.13.3 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.

4.13.4 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.

4.14 Reporting

4.14.1 Sampling Event Factual Report

No later than four weeks following receipt of the laboratory reports, AECOM will prepare and submit a Sampling Event Factual Report to Defence. 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 sampling forms including field water quality parameter measurements;
    i. COC forms;
    ii. Laboratory analytical certificates; and
    iii. Equipment calibration certificates.

4.14.2 Ongoing Monitoring Report

At the end of each 12-month monitoring period, AECOM will prepare and submit an Ongoing Monitoring Report (OMR) to Defence. The report will be in accordance with the latest version (v0.4) of the guidance document (Defence, 2022). Each OMR will include:

- evidence of compliance with the requirements of the SAQP and meeting stated objectives of the OMP (Defence, 2019)
- 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 (Defence, 2019)
- assessment and commentary on appropriate QA/QC procedures
- a review of the CSM and provision of a revised CSM 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 (Defence, 2019)
- 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 and/or PMAP review, or other action.

4.15 Deviations from OMP

While the scope of works and methodology described in this SAQP are generally consistent with that presented in the OMP (Defence, 2019), a number of points of deviation are noted (refer to **Table 15** below).

Table 15 Deviations from OMP

No.	Description	Rationale
1	Use of HydraSleeves™ rather than low flow / bladder pumps for the collection of groundwater samples	The Swartz Barracks OMP specified that groundwater samples were to be collected using low flow sampling equipment (bladder pump) where depth to groundwater is less than 50 metres below ground surface (mbgs). As part of AECOM's tender submission for the Defence OMP Program in March 2019, it was proposed to complete groundwater sampling across all Defence regions utilising no-purge HydraSleeves™. In addition to time and cost saving considerations, the adoption of HydraSleeves™ across the broader program was aimed to improve consistency, quality and comparability of groundwater data across sites and regions.
2	Adoption of Revised Recreational Screening Criteria for PFOS+PFHxS and PFOA	Following the release of the PMAP and OMP in July 2019, the National Health and Medical Research Council (NHMRC), published guidance on PFAS in Recreational Water in August 2019. 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.
3	Monitoring locations removed from the OMP in 2019	Prior to the first sampling event in 2019, Defence instructed the removal of sampling of bores owned by Toowoomba Regional Council and removal of sampling of residential bores where there will be no significant effect on the understanding of the extent of PFAS in groundwater. Where a significant effect is identified, alternative bores have been included. The following bores have been removed from the OMP: Comprehensive (March/April) event: MW106, MW107, MW108, MW027, MW034, MW037, MW091, MW004, MW006, MW100, MW011, MW023, MW029, MW045, MW063, MW064, MW046, MW056, MW138, MW119, MW142. Targeted (October) event: MW106, MW107, MW108, MW021, MW046, MW056, MW293. The following bores were added to the OMP: Comprehensive (March/April) event: MW022, MW084. Targeted (October) event: MW022, MW084, MW269, MW272, MW276.
4	Changes to the analytical suite	Analysis for non-PFAS analytes was included during the first three monitoring events (October 2019, March/April 2020 and October 2020) with 20% of groundwater, surface water and sediment samples analysed for major ions, total suspended solids, electrical conductivity, total organic content or dissolved organic content and cation exchange capacity. Defence has instructed non-PFAS analysis to be discontinued from the March/April 2021 sampling event.
5	Monitoring locations changed in 2022	Due to the property owner declining permission in 2021, the following bores have been removed from the OMP: MW020, MW022, MW031, MW032, MW160. MW253 and MW254 were decommissioned in 2021 by Defence. These wells were replaced with MW562 and MW563 in January 2022.
6	Monitoring locations changed in 2023	MW264 has been removed from the program as it was not found in 2023 and is likely to be buried under sediment. A replacement well is not considered necessary as existing up-gradient monitoring locations provide suitable coverage.

5.0 References

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Appendix A

Figures

Appendix A Figures



LEGEND

On-Site Groundwater Monitoring Locations

Site Boundary

N

0 75 150 300 m

AECOM

SCALE 1:9,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 1: On-Site Groundwater Monitoring Locations

PROJECT

PFAS OMP - Swartz Barracks SAQP

CLIENT

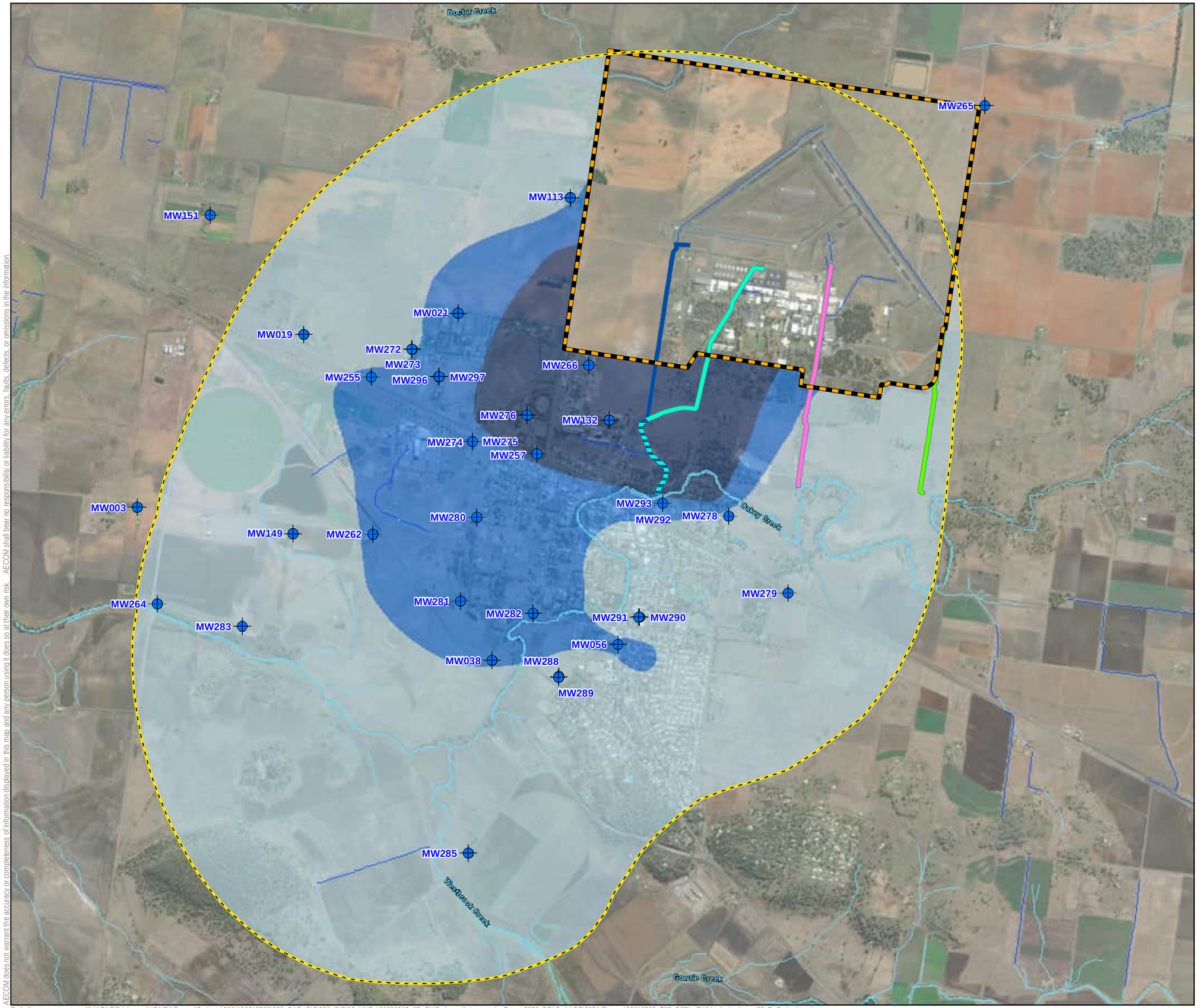
DEPARTMENT OF DEFENCE

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- Off-Site Groundwater Monitoring Well
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Monitoring wells and residential bores have only been included here if the landholder gave permission. As a result, not all monitoring wells and residential bores are depicted on the figure.

SIZE

0 0.25 0.5 1 km

AECOM

1:32,000

SIZE A3

TITLE

Figure 2: Off-Site Groundwater Monitoring Locations

PROJECT

PFAS OMP - Swartz Barracks SAQP

CLIENT

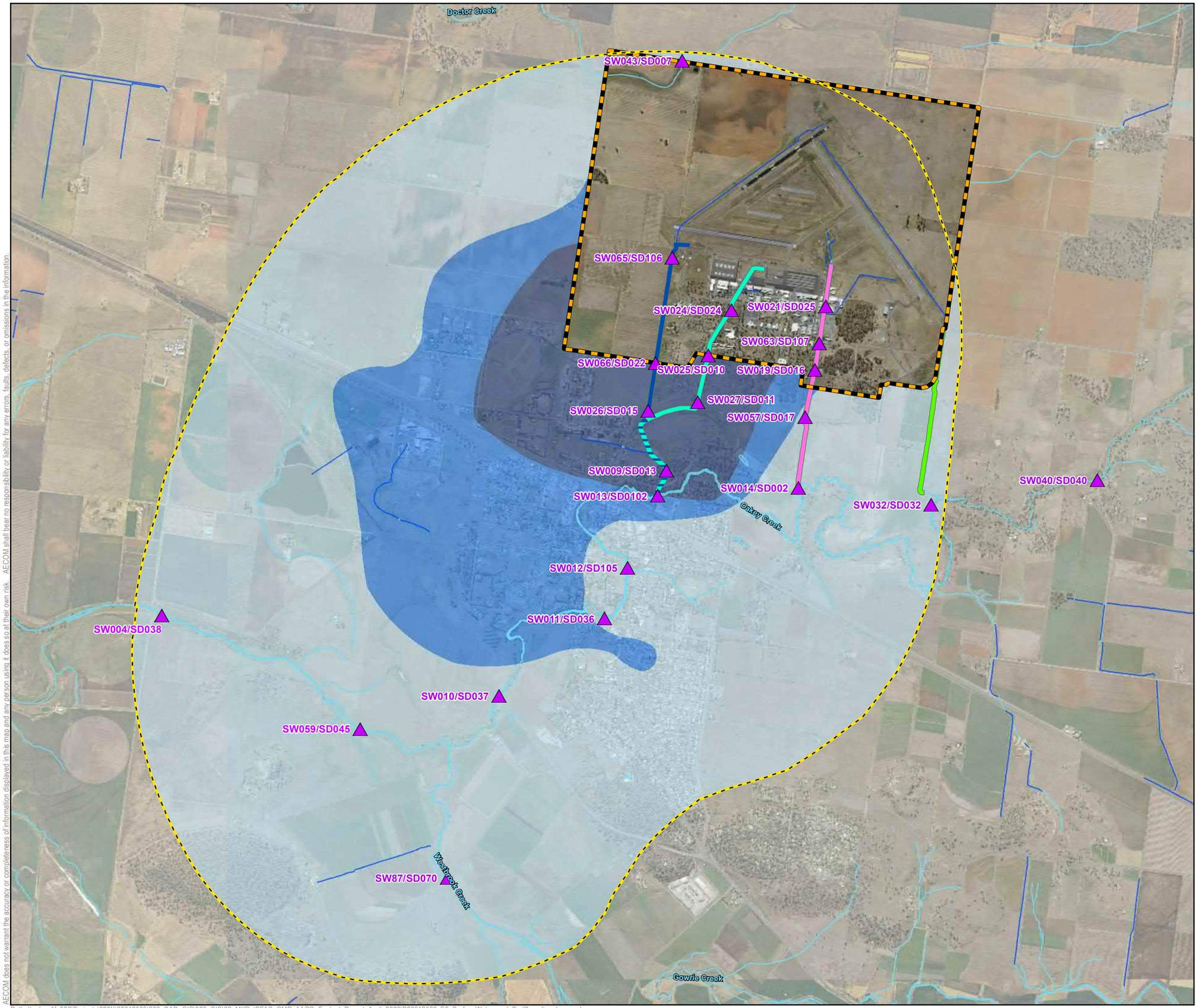
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LEGEND

- Offsite Surface Water and Sediment Sampling Locations
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

N

0 0.25 0.5 1 km

AECOM

SCALE 1:32,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 3: Surface Water and Sediment Sampling Locations

PROJECT

PFAS OMP- Swartz Barracks SAQP

CLIENT

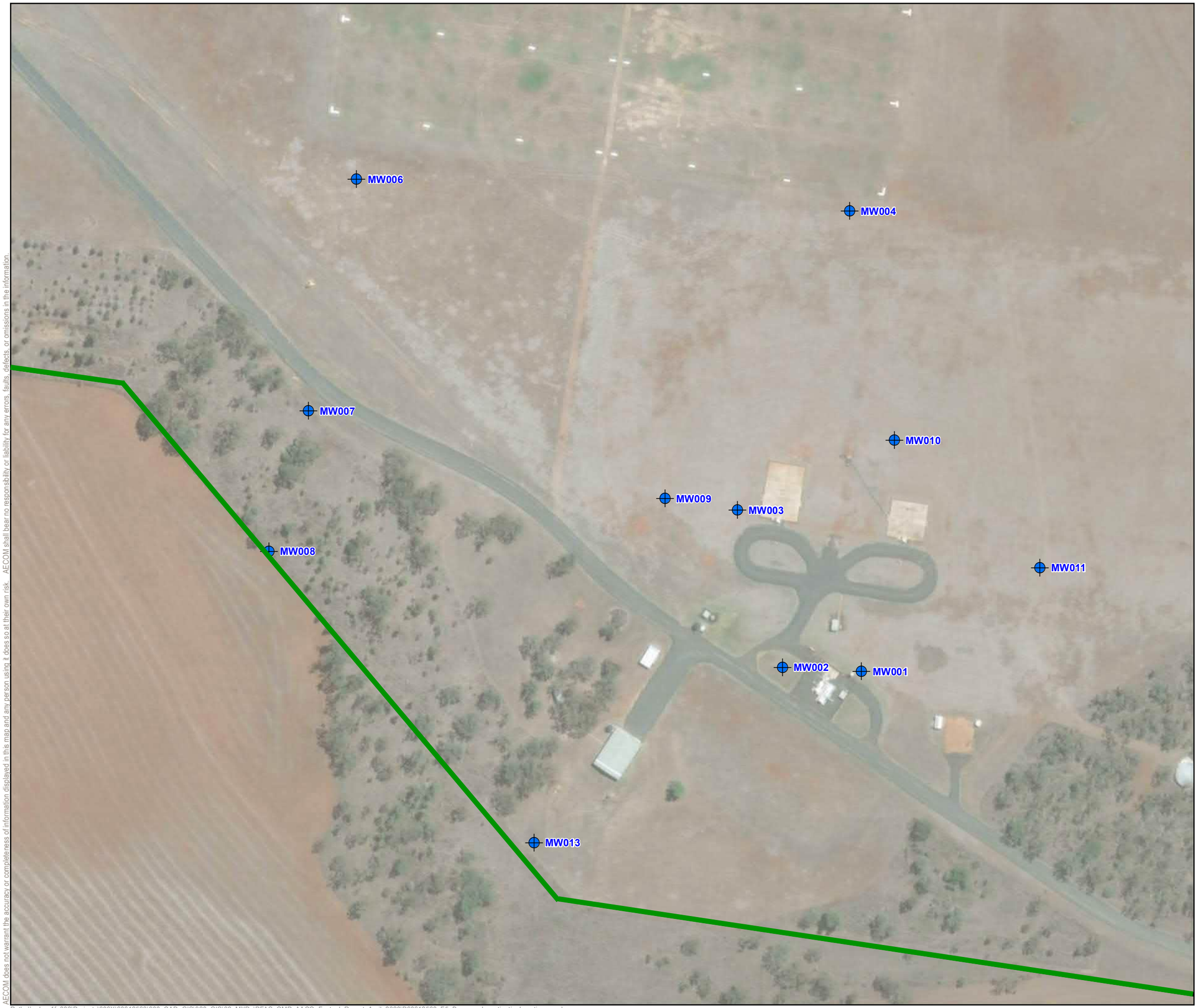
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LEGEND

- Groundwater Monitoring Locations
- Brymaroo Satellite Site Boundary

N

0 10 20 40 m

AECOM

SCALE 1:2,000

SIZE A3

SHEET **1 of 1**

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Brymaroo Groundwater Monitoring Locations

PROJECT

PFAS OMP Swartz Barracks SAQP

CLIENT

DEPARTMENT OF DEFENCE

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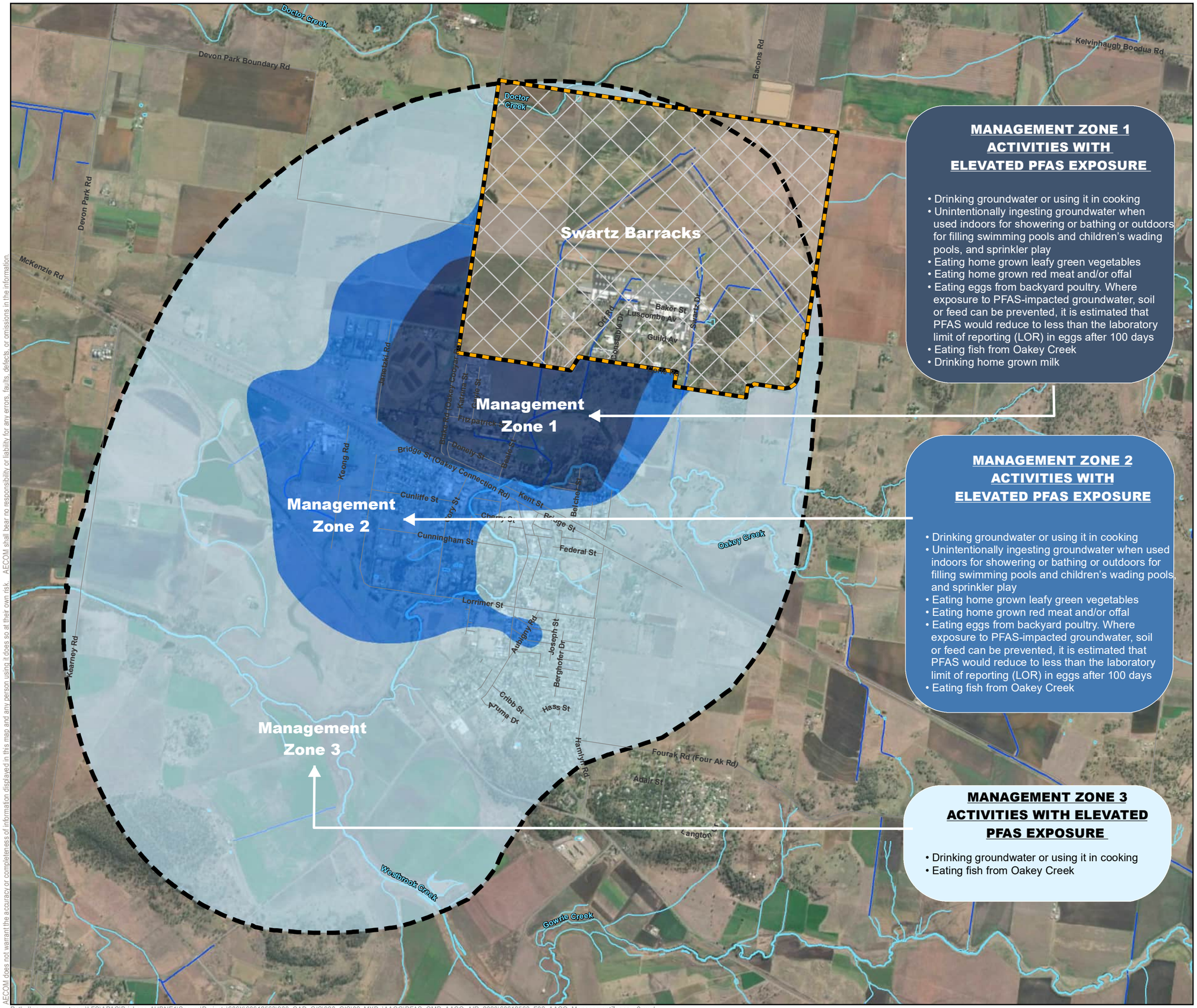
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Appendix B

Swartz Barracks Management Area



MANAGEMENT ZONE 1 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek
- Drinking home grown milk

MANAGEMENT ZONE 2 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek

MANAGEMENT ZONE 3 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Eating fish from Oakey Creek

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:35,000 (when printed at A3)

LEGEND

- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- Site Boundary

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011

CLIENT
DEPARTMENT OF DEFENCE

Swartz Barracks Management Area

PROJECT ID	60612563
CREATED BY	BM
LAST MODIFIED	[redacted]; 15/11/2023
VERSION:	1

FIGURE 1

A3 size

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Appendix C

Sample IDs

Appendix C Sample IDs

Swartz Barracks

New Location Code (0207)	Old Location Code
MW001	AACO-GW01
MW002	AACO-GW02
MW003	AACO-GW03
MW004	AACO-GW04
MW005	AACO-GW05
MW006	AACO-GW06
MW007	AACO-GW07
MW008	AACO-GW08
MW009	AACO-GW09
MW010	AACO-GW10
MW011	AACO-GW11
MW012	AACO-GW12
MW013	AACO-GW13
MW014	AACO-GW14
MW015	AACO-GW15
MW016	AACO-GW16
MW017	AACO-GW17
MW018	AACO-GW18
MW019	AACO-GW19
MW020	AACO-GW20
MW021	AACO-GW21
MW022	AACO-GW22
MW023	AACO-GW23
MW024	AACO-GW24
MW025	AACO-GW25
MW026	AACO-GW26
MW027	AACO-GW27
MW028	AACO-GW28
MW029	AACO-GW29
MW030	AACO-GW30
MW031	AACO-GW31
MW032	AACO-GW32
MW033	AACO-GW33
MW034	AACO-GW34
MW035	AACO-GW35
MW036	AACO-GW36
MW037	AACO-GW37
MW038	AACO-GW38
MW039	AACO-GW39
MW040	AACO-GW40
MW041	AACO-GW41
MW042	AACO-GW42
MW043	AACO-GW43
MW044	AACO-GW44

New Location Code (0207)	Old Location Code
MW045	AACO-GW45
MW046	AACO-GW46
MW047	AACO-GW47
MW048	AACO-GW48
MW049	AACO-GW49
MW050	AACO-GW50
MW051	AACO-GW51
MW052	AACO-GW52
MW053	AACO-GW53
MW054	AACO-GW54
MW055	AACO-GW55
MW056	AACO-GW56
MW057	AACO-GW57
MW058	AACO-GW58
MW059	AACO-GW59
MW060	AACO-GW60
MW061	AACO-GW61
MW062	AACO-GW62
MW063	AACO-GW63
MW064	AACO-GW64
MW065	AACO-GW65
MW066	AACO-GW66
MW067	AACO-GW67
MW068	AACO-GW68
MW069	AACO-GW69
MW070	AACO-GW70
MW071	AACO-GW71
MW072	AACO-GW72
MW073	AACO-GW73
MW074	AACO-GW74
MW075	AACO-GW75
MW076	AACO-GW76
MW077	AACO-GW77
MW078	AACO-GW78
MW079	AACO-GW79
MW080	AACO-GW80
MW081	AACO-GW81
MW082	AACO-GW82
MW083	AACO-GW83
MW084	AACO-GW84
MW085	AACO-GW85
MW086	AACO-GW86
MW087	AACO-GW87
MW088	AACO-GW88
MW089	AACO-GW89
MW090	AACO-GW90
MW091	AACO-GW91
MW092	AACO-GW92

New Location Code (0207)	Old Location Code
MW093	AACO-GW93
MW094	AACO-GW94
MW095	AACO-GW95
MW096	AACO-GW96
MW097	AACO-GW97
MW098	AACO-GW98
MW099	AACO-GW99
MW100	AACO-GW100
MW106	AACO-BORE5
MW107	AACO-BORE6
MW108	AACO-BORE7
MW109	AACO-BORE8
MW110	AACO-RN87015
MW112	AACO-RN137030
MW113	AACO-RN48068
MW114	AACO-RN44070
MW115	AACO-RN26097
MW116	AACO-RN64115
MW117	AACO-RN55116
MW118	AACO-RN107119
MW119	AACO-RN35185
MW120	AACO-RN83204
MW121	AACO-RN147211
MW122	AACO-RN83214
MW123	AACO-RN36256
MW124	AACO-RN66256
MW125	AACO-RN119261
MW126	AACO-RN83264
MW127	AACO-RN66274
MW128	AACO-RN137284
MW129	AACO-RN61286
MW130	AACO-RN119324
MW132	AACO-RN147352
MW133	AACO-RN43357
MW134	AACO-RN83362
MW135	AACO-RN87369
MW138	AACO-RN36426
MW139	AACO-RN137433
MW140	AACO-RN87439
MW141	AACO-RN35453
MW142	AACO-RN64455
MW143	AACO-RN147464
MW144	AACO-RN147480
MW145	AACO-RN61496
MW146	AACO-RN66503
MW147	AACO-RN107547
MW148	AACO-RN16592
MW149	AACO-RN43659

New Location Code (0207)	Old Location Code
MW150	AACO-RN87659
MW151	AACO-RN86696
MW152	AACO-RN147699
MW153	AACO-RN137706
MW154	AACO-RN86733
MW155	AACO-RN107812
MW156	AACO-RN87870
MW157	AACO-RN21897
MW158	AACO-RN21974
MW159	AACO-RN35983
MW160	AACO-RN21997
MW161	AACO-RN52999
MW167	AACO-MWA1-B
MW168	AACO-MWA1-D
MW169	AACO-MWA2-A
MW170	AACO-MWA2-B
MW171	AACO-MWA2-C
MW172	AACO-MWA2-D
MW173	AACO-MWA2-E
MW174	AACO-MWA4-A
MW176	AACO-MWA4-B-BB
MW177	AACO-MWA4-B-LA
MW178	AACO-MWA4-B-UA
MW179	AACO-MWA5-A-LA
MW180	AACO-MWA5-A-UA
MW185	AACO-MWB3-A
MW186	AACO-MWB3-B
MW187	AACO-MWB5-A
MW188	AACO-MWB5-A-WCM
MW189	AACO-MWB5-B
MW190	AACO-MWB5-C
MW191	AACO-MWB5-D
MW193	AACO-MWC1-C
MW198	AACO-MWC1-H
MW199	AACO-MWC1-I
MW201	AACO-MW201
MW202	AACO-MW202
MW203	AACO-MW203
MW204	AACO-MW204
MW205	AACO-MW205
MW206	AACO-MWC2-A
MW207	AACO-MWC2-B
MW208	AACO-MWC2-C
MW217	AACO-MWC2-D
MW218	AACO-MWC2-E
MW221	AACO-MWC2-I
MW222	AACO-MWC2-K
MW223	AACO-MWC2-L

New Location Code (0207)	Old Location Code
MW224	AACO-MWC2-M
MW225	AACO-MWC2-N
MW226	AACO-MWC2-O
MW227	AACO-MWC2-Q
MW228	AACO-MWC3-A
MW229	AACO-MWC3-I
MW230	AACO-MWD2-A
MW231	AACO-RN87231
MW232	AACO-MWD2-E
MW233	AACO-MWE-J
MW235	AACO-MWF1-B
MW236	AACO-MWF1-C
MW240	AACO-MWF1-G
MW241	AACO-MWF1-H
MW242	AACO-MWG1-A-LA
MW245	AACO-MWG1-C-LA
MW247	AACO-MWN-B
MW249	AACO-MWN-D
MW250	AACO-MWN-H-LA
MW252	AACO-MWN-I
MW253	AACO-MWN-J
MW254	AACO-MWN-K
MW255	AACO-MWO-A-LA
MW256	AACO-MWO-A-UA
MW257	AACO-MWO-B-LA
MW258	AACO-MWO-B-UA
MW261	AACO-MWO-D-LA
MW262	AACO-MWO-D-UA
MW263	AACO-MWO-E-LA
MW264	AACO-MWO-E-UA
MW265	AACO-MWO-F-AL
MW266	AACO-MWO-G-AL
MW267	AACO-MWO-H-AL
MW268	AACO-MWO-H-UA
MW269	AACO-MWO-H-WCM
MW270	AACO-MWO-I-AL
MW271	AACO-MWO-I-MRV
MW272	AACO-MWO-J-AL
MW273	AACO-MWO-J-WCM
MW274	AACO-MWO-K-AL
MW275	AACO-MWO-K-MRV
MW276	AACO-MWO-L-AL
MW278	AACO-MWO-M-AL
MW279	AACO-MWO-N-AL
MW280	AACO-MWO-O-AL
MW281	AACO-MWO-P-AL
MW282	AACO-MWO-Q-AL
MW283	AACO-MWO-R-AL

New Location Code (0207)	Old Location Code
MW285	AACO-MWO-T-AL
MW288	AACO-MWO-V-AL
MW289	AACO-MWO-V-WCM
MW290	AACO-MWO-W-AL
MW291	AACO-MWO-W-WCM
MW292	AACO-MWO-X-AL
MW293	AACO-MWO-X-WCM
MW294	AACO-MWO-Y-AL
MW295	AACO-MWO-Y-WCM
MW296	AACO-MWO-Z-AL
MW297	AACO-MWO-Z-WCM
MW298	AACO-MWS1-A
MW299	AACO-MWS1-B
MW300	AACO-MWS1-D
SD001	AACO-SED001
SD002	AACO-SED002
SD004	AACO-SED004
SD005	AACO-SED005
SD006	AACO-SED006
SD007	AACO-SED007
SD008	AACO-SED08
SD009	AACO-SED09
SD010	AACO-SED010
SD011	AACO-SED011
SD012	AACO-SED012
SD013	AACO-SED013
SD014	AACO-SED014
SD015	AACO-SED015
SD016	AACO-SED016
SD017	AACO-SED017
SD019	AACO-SED019
SD020	AACO-SED020
SD021	AACO-SED021
SD022	AACO-SED22
SD023	AACO-SED23
SD024	AACO-SED24
SD025	AACO-SED25
SD030	AACO-SED030
SD031	AACO-SED031
SD032	AACO-SED032
SD035	AACO-SED035
SD036	AACO-SED036
SD037	AACO-SED037
SD040	AACO-SED040
SD041	AACO-SED041
SD042	AACO-SED042
SD044	AACO-SED044
SD045	AACO-SED045

New Location Code (0207)	Old Location Code
SD046	AACO-SED046
SD047	AACO-SED047
SD048	AACO-SED048
SD049	AACO-SED049
SD050	AACO-SED050
SD051	AACO-SED051
SD052	AACO-SED052
SD053	AACO-SED053
SD054	AACO-SED054
SD055	AACO-SED055
SD056	AACO-SED056
SD057	AACO-SED057
SD058	AACO-SED058
SD059	AACO-SED059
SD060	AACO-SED060
SD061	AACO-SED061
SD062	AACO-SED062
SD063	AACO-SED063
SD064	AACO-SED064
SD065	AACO-SED065
SD066	AACO-SED66
SD067	AACO-SED67
SD068	AACO-SED68
SD070	AACO-SED070
SD074	AACO-SED018A
SD075	AACO-SED018B
SD076	AACO-SED033A
SD077	AACO-SED033B
SD078	AACO-SED034A
SD079	AACO-SED034B
SD100	AACO-SED100
SD102	AACO-SED102
SD103	AACO-SED103
SD104	AACO-SED104
SD105	AACO-SED105
SD106	AACO-SED106
SD107	AACO-SED107
SW001	AACO-SW01
SW002	AACO-SW02
SW003	AACO-SW03
SW004	AACO-SW04
SW005	AACO-SW05
SW006	AACO-SW06
SW007	AACO-SW07
SW008	AACO-SW08
SW009	AACO-SW09
SW010	AACO-SW10
SW011	AACO-SW11

New Location Code (0207)	Old Location Code
SW012	AACO-SW12
SW013	AACO-SW13
SW014	AACO-SW14
SW015	AACO-SW15
SW016	AACO-SW16
SW017	AACO-SW17
SW018	AACO-SW18
SW019	AACO-SW19
SW020	AACO-SW20
SW021	AACO-SW21
SW022	AACO-SW22
SW023	AACO-SW23
SW024	AACO-SW24
SW025	AACO-SW25
SW026	AACO-SW26
SW027	AACO-SW27
SW028	AACO-SW87
SW029	AACO-SW88
SW030	AACO-SW30
SW031	AACO-SW31
SW032	AACO-SW32
SW033	AACO-SW89
SW034	AACO-SW90
SW035	AACO-SW35
SW036	AACO-SW36
SW037	AACO-SW37
SW038	AACO-SW33A
SW039	AACO-SW33B
SW040	AACO-SW40
SW041	AACO-SW41
SW042	AACO-SW42
SW043	AACO-SW43
SW044	AACO-SW34A
SW045	AACO-SW34B
SW050	AACO-SW50
SW051	AACO-SW51
SW053	AACO-SW53
SW054	AACO-SW54
SW055	AACO-SW55
SW056	AACO-SW56
SW057	AACO-SW57
SW058	AACO-SW58
SW059	AACO-SW59
SW060	AACO-SW60
SW061	AACO-SW61
SW062	AACO-SW62
SW063	AACO-SW63
SW064	AACO-SW64

New Location Code (0207)	Old Location Code
SW065	AACO-SW65
SW066	AACO-SW66
SW067	AACO-SW67
SW068	AACO-SW68
SW069	AACO-SW69
SW070	AACO-SW70
SW071	AACO-SW71
SW072	AACO-SW72
SW073	AACO-SW73
SW074	AACO-SW74
SW075	AACO-SW75
SW076	AACO-SW76
SW077	AACO-SW77
SW078	AACO-SW78
SW079	AACO-SW79
SW080	AACO-SW80
SW081	AACO-SW81
SW082	AACO-SW82
SW083	AACO-SW83
SW084	AACO-SW84
SW085	AACO-SW85
SW086	AACO-SW86

Brymaroo

New Location Code (1435)	Old Location Code
MW001	BRY-MW-E
MW002	BRY-MW-F
MW003	BRY-MW-G
MW004	BRY-MW-H
MW005	BRY-MW-I
MW006	BRY-MW-J
MW007	BRY-MW-K
MW008	BRY-MW-L
MW009	BRY-MW-R
MW010	BRY-MW-S
MW011	BRY-MW-T
MW012	BRY-MW-U
MW013	BRY-MW-V
OTH004	WD-18-28
OTH005	WD-7-17
POT001	BRY_TW02
POT002	BRY-A17
POT003	BRY-BH-L
POT004	BRY-TAP01
POT005	BRY-TW01
SED001	BRY-SED-HP

Appendix D

Monitoring Well Construction Details

Appendix D Monitoring Well Construction Details

Swartz Barracks Monitoring Wells

Location ID	Date of Installation	Easting	Northing	TOC Elevation (m AHD)	Final Depth (m)	Top of screen (mbgs)	Top of screen (mAHD)	Bottom of screen (mbgs)	Bottom of screen (mAHD)	Length of screen (m)	Midpoint of screen (mbgs)	Midpoint of screen (mAHD)	Targeted Depth for sampling (mbgs)
MW167	25/01/2011	373988.700	6967037.700	402.428	16.00	11.5	390.928	16.0	386.428	4.5	13.8	388.678	15.0
MW172	21/02/2017	373952.946	6967329.488	402.818	18.00	12.0	390.818	18.0	384.818	6.0	15.0	387.818	17.0
MW173	23/02/2017	373997.781	6967324.987	403.262	18.00	12.0	391.262	18.0	385.262	6.0	15.0	388.262	17.0
MW174	14/11/2012	374327.000	6966684.000	404.072	29.90	25.0	379.072	29.0	375.072	4.0	27.0	377.072	28.0
MW178	21/11/2015	374420.713	6966460.701	403.513	17.65	14.5	389.013	17.5	386.013	3.0	16.0	387.513	16.5
MW179	19/10/2015	373949.73	6966401.743	403.000	15.01	11.5	391.500	14.4	388.600	2.9	13.0	390.050	13.0
MW201	8/04/2016	374833.900	6966978.300	404.800	20.00	13.0	391.800	20.0	384.800	7.0	16.5	388.300	19.0
MW202	8/04/2016	374867.400	6966984.900	405.000	20.00	12.6	392.400	19.6	385.400	7.0	16.1	388.900	18.5
MW203	01/04/2016	374782.800	6966991.000	405.200	20.02	13.0	392.200	20.0	385.200	7.0	16.5	388.700	19.0
MW204	01/04/2016	374797.30	6967032.300	405.200	20.00	13.0	392.200	20.0	385.200	7.0	16.5	388.700	19.0
MW205	01/04/2016	374801.100	6967057.300	405.700	20.10	13.0	392.200	20.0	385.200	7.0	16.5	388.700	19.0
MW207	12/11/2010	375080.828	6966907.830	405.416	20.00	14.5	390.916	20.0	385.416	5.5	17.3	388.166	19.0
MW187	3/11/2010	374371.535	6966553.501	404.576	20.00	13.0	391.576	19.0	385.576	6.0	16.0	388.576	18.0
MW189	1/11/2010	374933.124	6966396.323	404.652	21.80	13.8	390.852	21.8	382.852	8.0	17.8	386.852	21.0
MW193	3/12/2010	375179.990	6966963.000	405.630	20.24	14.5	391.130	20.5	385.130	6.0	17.5	388.130	19.5
MW198	28/11/2010	375096.080	6966968.114	405.505	13.54	10.5	395.005	14.0	391.505	3.5	12.3	393.255	13.0
MW206	21/04/2010	375112.346	6966930.445	405.720	20.00	11.0	394.720	20.0	385.720	9.0	15.5	390.220	19.0
MW221	23/11/2010	375177.000	6966868.000	405.496	20.00	14.0	391.496	20.0	385.496	6.0	17.0	388.496	19.0
MW222	29/04/2010	375236.886	6966895.475	405.716	20.00	10.5	395.216	20.0	385.716	9.5	15.3	390.466	19.0
MW223	30/04/2010	375233.446	6966873.127	405.845	20.50	11.5	394.345	20.5	385.345	9.0	16.0	389.845	19.5
MW229	5/05/2010	375035.000	6966784.000	405.533	15.63	6.5	399.033	15.5	390.033	9.0	11.0	394.533	14.5
MW230	8/02/2017	375257.278	6966864.228	405.416	20.00	12.0	393.416	20.0	385.416	8.0	16.0	389.416	19.0
MW232	21/02/2017	375278.884	6967034.038	405.898	12.00	6.0	399.898	12.0	393.898	6.0	9.0	396.898	11.0
MW233	10/02/2017	375852.783	6966869.508	406.47	18.50	9.5	396.970	18.5	387.970	9.0	14.0	392.470	17.5
MW235	4/05/2010	375195.913	6967387.707	406.308	22.50	10.5	395.808	22.5	383.808	12.0	16.5	389.808	21.5
MW236	1/03/2011	375223.000	6967391.000	405.653	18.00	15.0	390.653	18.0	387.653	3.0	16.5	389.153	17.0
MW241	24/02/2017	375132.957	6967284.431	405.883	18.00	9.0	396.883	18.0	387.883	9.0	13.5	392.383	17.0
MW242	19/10/2015	372979.530	6966547.027	402.030	21.14	17.0	385.030	20.0	382.030	3.0	18.5	383.530	19.0
MW245	18/10/2015	373204.825	6968019.455	402.981	21.88	18.0	384.981	21.0	381.981	3.0	19.5	383.481	20.0
MW249	3/05/2010	374753.317	6967348.513	404.769	19.50	10.5	394.269	19.5	385.269	9.0	15.0	389.769	18.5
MW252	24/02/2017	375503.233	6967781.435	406.162	16.50	10.5	395.662	16.5	389.662	6.0	13.5	392.662	15.5
MW562	27/01/2022	373923.910	6967427.530	402.72	16.55	10.5	392.55	16.5	386.550	6.0	13.5	389.550	15.5
MW563	27/01/2022	374025.660	6967439.910	402.90	19.50	10.5	392.40	19.5	383.450	9.0	15.0	387.900	18.5
MW265	23/02/2017	374105.104	6967454.100	403.05	16.60	10.5	392.550	16.5	386.550	6.0	13.5	389.550	15.5
MW299	12/11/2010	374304.020	6967100.140	403.970	15.50	11.00	392.970	15.5	388.470	4.5	13.3	390.720	14.5
MW300	9/02/2017	374284.45	6967091.281	403.715	20.00	11.0	392.715	20.0	383.715	9.0	15.5	388.215	19.0
MW255	14/10/2015	371269.338	6966290.787	397.784	24.09	21.0	376.784	24.0	373.784	3.0	22.5	375.284	23.0
MW257	15/10/2015	372725.267	6965608.026	400.833	23.90	21.0	379.833	24.0	376.833	3.0	22.5	378.333	23.0
MW262	13/10/2015	371282.068	6964911.981	398.329	18.05	14.7	383.629	17.7	380.629	3.0	16.2	382.129	16.7
MW264	12/10/2015	369386.635	6964300.399	392.755	11.03	8.0	384.755	11.0	381.755	3.0	9.5	383.255	10.0
MW265	27/02/2017	376659.704	6968676.499	408.398	19.00	13.0	395.398	19.0	389.398	6.0	16.0	392.398	18.0

Location ID	Date of Installation	Easting	Northing	TOC Elevation (m AHD)	Final Depth (m)	Top of screen (mbgs)	Top of screen (mAHD)	Bottom of screen (mbgs)	Bottom of screen (mAHD)	Length of screen (m)	Midpoint of screen (mbgs)	Midpoint of screen (mAHD)	Targeted Depth for sampling (mbgs)
MW266	8/03/2017	373179.025	6966397.463	401.316	21.50	15.5	385.816	21.5	379.816	6.0	18.5	382.816	20.5
MW267	29/03/2017	373662.068	6965912.288	401.392	86.00	44.0	357.392	50.0	351.392	6.0	47.0	354.392	49.0
MW268	25/05/2017	373675.071	6965916.434	401.323	20.00	11.0	390.323	20.0	381.323	9.0	15.5	385.823	19.0
MW269	25/05/2017	373666.944	6965913.769	401.958	87.00	84.0	317.958	87.0	314.958	3.0	85.5	316.458	86.0
MW270	21/03/2017	375064.649	6965907.642	404.078	20.00	8.0	396.078	20.0	384.078	12.0	14.0	390.078	19.0
MW271	19/03/2017	375037.598	6965908.795	403.855	63.00	58.0	345.855	63.0	340.855	5.0	60.5	343.355	62.0
MW272	9/03/2017	371625.718	6966537.079	397.972	20.00	14.0	383.972	20.0	377.972	6.0	17.0	380.972	19.0
MW273	17/02/2017	371624.525	6966535.793	398.044	66.00	63.0	335.044	66.0	332.044	3.0	64.5	333.544	65.0
MW274	13/03/2017	372134.234	6965727.269	399.947	31.00	25.0	374.947	31.0	368.947	6.0	28.0	371.947	30.0
MW275	28/02/2017	372135.679	6965728.774	399.911	55.00	49.0	350.911	55.0	344.911	6.0	52.0	347.911	54.0
MW276	28/02/2017	372636.624	6965956.831	400.474	20.00	14.0	386.474	20.0	380.474	6.0	17.0	383.474	19.0
MW278	28/02/2017	374408.336	6965071.276	404.155	22.00	16.0	388.155	22.0	382.155	6.0	19.0	385.155	21.0
MW279	28/02/2017	374930.620	6964394.070	406.341	20.00	12.3	394.041	18.3	388.041	6.0	15.3	391.041	17.0
MW280	27/02/2017	372195.219	6965061.244	398.486	30.00	24.0	374.486	30.0	368.486	6.0	27.0	371.486	29.0
MW281	27/02/2017	372053.568	6964321.963	396.856	20.00	14.0	382.856	18.8	378.056	4.8	16.4	380.456	18.0
MW282	27/02/2017	372687.834	6964215.533	397.327	17.00	10.0	387.327	16.0	381.327	6.0	13.0	384.327	15.0
MW283	19/04/2017	370134.309	6964100.382	395.371	15.00	12.0	383.371	15.0	380.371	3.0	13.5	381.871	14.0
MW285	6/04/2017	372119.867	6962108.831	398.331	10.50	7.5	390.831	10.5	387.831	3.0	9.0	389.331	9.5
MW288	25/05/2017	372916.724	6963661.002	402.161	22.50	18.0	384.161	21.0	381.161	3.0	19.5	382.661	20.0
MW289	25/05/2017	372912.799	6963651.994	402.072	65.00	61.0	341.072	64.0	338.072	3.0	62.5	339.572	63.0
MW290	7/04/2017	373624.533	6964182.101	403.688	21.00	14.0	389.688	21.0	382.688	7.0	17.5	386.188	20.0
MW291	25/03/2017	373619.513	6964183.05	403.709	56.00	53.0	350.709	56.0	347.709	3.0	54.5	349.209	55.0
MW292	29/03/2017	373842.166	6965189.151	401.818	20.00	13.0	388.818	19.0	382.818	6.0	16.0	385.818	18.0
MW293	27/03/2017	373829.134	6965184.296	402.021	68.00	59.0	343.021	68.0	334.021	9.0	63.5	338.521	67.0
MW294	18/04/2017	374648.616	6965454.601	403.780	20.00	14.0	389.780	20.0	383.780	6.0	17.0	386.780	19.0
MW295	22/03/2017	374589.848	6965368.689	402.837	70.00	61.0	341.837	67.0	335.837	6.0	64.0	338.837	66.0
MW296	25/05/2017	371860.259	6966295.711	399.155	20.00	11.0	388.155	20.0	379.155	9.0	15.5	383.655	19.0
MW297	25/05/2017	371864.545	6966295.160	399.230	80.00	74.0	325.230	80.0	319.230	6.0	77.0	322.230	79.0
MW562	27/01/2022	373923.91	6967427.53	402.72	16.55	10.5	392.22	16.5	386.22	6.0	13.5	378.72	15.5
MW563	27/01/2022	374025.66	6967439.91	402.90	19.50	10.5	392.40	19.5	383.45	9.0	15.0	377.40	18.5

Brymaroo Monitoring Wells

MW ID	MW ID	EASTING	NORTHING	Relative Elevation (m AHD)	Screen to - from (mbgs)	Date of Installation	Total Depth (m BTOC)	Targeted depth for Hydrasleeve (mbtoc)
MW001	MW-E	363293.51	6986842.67	418.53	18 - 21	08/02/2011	21.00	20.0
MW002	MW-F	363249.61	6986844.27	418.22	17.5 - 20.5	26/08/2015	20.50	19.5
MW003	MW-G	363224.76	6986930.66	418.05	17.4 - 20.4	26/08/2015	20.40	19.5
MW004	MW-H	363286.39	6987094.84	417.38	18.5 - 25.0	1/02/2018	25.00	24.0
MW005	MW-I	363139.64	6987119.10	417.85	20.5 - 27.0	1/02/2018	27.00	26.0
MW006	MW-J	363015.56	6987112.34	416.46	20.5 - 27.0	1/02/2018	27.00	26.0
MW007	MW-K	362989.17	6986984.98	416.41	18.5 - 25.0	1/02/2018	25.00	24.0
MW008	MW-L	362967.45	6986907.97	415.19	14.5 - 21.0	1/02/2018	21.00	20.0
MW009	MW-R	363185.37	6986937.35	417.99	20.0 - 26.0	28/02/2017	26.00	25.0
MW010	MW-S	363311.34	6986969.52	418.02	21.0 - 27.1	23/02/2017	27.1	26.0
MW011	MW-T	363391.01	6986899.30	418.29	21.5 - 27.5	1/03/2017	27.5	26.5
MW012	MW-U	363239.11	6986873.82	418.34	21.5 - 27.5	28/02/2017	27.5	26.5
MW013	MW-V	363113.95	6986748.15	415.93	18.5 - 24.0	27/02/2017	24.0	23.0

Appendix D

Sampling Events Factual Reports

Sampling Event Factual Report, October 2024

PFAS OMP – Swartz Barracks (formerly known as Army Aviation Centre Oakey)

Department of Defence

04 December 2024

→ The Power of Commitment



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GHD Pty Ltd | ABN 39 008 488 373

[redacted]

230 Harbour Drive,
Coffs Harbour, New South Wales 2450, Australia
T +61 2 6650 5600 | **F** +61 2 9475 0725 | **E** cfsmail@ghd.com | **ghd.com**

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Abbreviations

Abbreviations	
AFFF	Aqueous film forming foam
ALS	Australian Laboratory Services
BOM	Bureau of Meteorology
COC	Chain of Custody
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
GHD	GHD Pty Ltd
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LOR	Limit of reporting
mAHD	Metres Australian height datum
mbtoc	Metres below top of casing
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Amendment Measure
NHMRC	National Health and Medical Research Council
OMP	Ongoing monitoring plan
OMR	Ongoing Monitoring Report
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS Management Area Plan
QA / QC	Quality assurance / quality control
QLD	Queensland
Redox	Oxidation-reduction potential
RPD	Relative percent difference
SAQP	Sampling Analysis and Quality Plan

PFAS Group	Compound	CAS NoChe.
Perfluoroalkyl Sulfonic Acids	Perfluorobutane sulfonate (PFBS)	375-73-5
	Perfluoropentane sulfonate (PFPeS)	2706-91-4
	Perfluorohexane sulfonate (PFHxS)	355-46-4
	Perfluoroheptane sulfonate (PFHpS)	375-92-8
	Perfluorooctane sulfonate (PFOS)	1763-23-1
	Perfluorodecane sulfonate (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
	Perfluorohexadecanoic acid (PFHxDA)	67905-19-5
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

Units of Measurements			
L	Litres	M	Metres
Mg	Milligram	ha	Hectares
kg	Kilogram	µg	Microgram
mV	Millivolts	°C	Degrees Celsius
µS	Microsiemens	mm	Millimetre

1. Introduction

1.1 General

GHD Pty Ltd (GHD) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluorinated alkyl substances (PFAS) Ongoing Monitoring Plan (OMP) (Defence, 2019a) at Swartz Barracks (the 'Base') and the Swartz Barracks Management Area. The locations of the Base and the Management Area are shown in Figure 1 and Figure 2 in Appendix A.

The OMP for Swartz Barracks (Defence, 2019a) outlines that monitoring will be conducted in two six-monthly events, including:

– Targeted groundwater sampling in October.
– Annual comprehensive sampling in March/April, including groundwater, sediment and surface water sampling.

This sampling event factual report has been prepared to report the results of the sampling event completed in October 2024, specifically highlighting first-time detections and / or new exceedances of human health screening criteria for the primary PFAS of concern, perfluorohexane sulfonate (PFHxS) and perfluorooctane sulfonate (PFOS) and / or perfluorooctanoic acid (PFOA).

This report has been prepared in accordance with the Defence *Ongoing Monitoring Program Reporting Guidance* issued in February 2024 (Defence, 2024).

1.2 Objectives

The objective of this phase of works was to implement the scope of works for the October 2024 sampling event in accordance with the April 2024 Sampling Analysis and Quality Plan (SAQP) (AECOM, 2024b), as required to meet the PFAS Management Area Plan (PMAP) (Defence, 2019b). GHD notes that additional 17 wells recently installed on the western boundary of the Base were added to the scope. GHD prepared an SAQP Addendum (GHD, 2024) outlining these changes and the sampling approach.

The objective of the OMP sampling event is to collect data to monitor changes in the locations and concentrations of PFAS contamination at the Base and in the Management Area to allow Defence to identify risks and inform Defence's approach to the management of PFAS, including updates and revisions of the PMAP (2019b).

1.3 Limitations

This report has been prepared by GHD for Department of Defence and may only be used and relied on by Department of Defence for the purpose agreed between GHD and Department of Defence as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Department of Defence arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Department of Defence and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Scope of Work

The sampling event at Swartz Barracks was completed in general accordance with the April 2024 SAQP (AECOM, 2024b) and SAQP Addendum (GHD, 2024). Table 2.1 outlines the locations that were included in this round of sampling, and these are shown on Figure 3 and Figure 4 in Appendix A. The scope is summarised below:

– Obtain approval for site access and permission to access private properties.
– Gauging of the groundwater levels in monitoring wells.
– Collection of groundwater samples at 57 monitoring wells and bores (46 at Swartz Barracks, 11 located off-Base). Locations not sampled are discussed in Section 2.1.
– Collection of quality control / quality assurance (QA/QC) samples as follows:
    - Intra- and inter-laboratory duplicate samples at a rate of 1 in 10 primary samples.
    - One rinsate sample per fieldwork day when re-usable (i.e., decontaminated) equipment was in use.
    - One trip blank per laboratory batch.
– Analysis of all samples for the standard PFAS suite at the standard limit of reporting (LOR), in accordance with the SAQP.
– Review all laboratory data to prepare this document.
– Preparation of this Sampling Event Factual Report.
– Preparation and distribution of Results Letters to private land holders where samples were collected.

Table 2.1 Groundwater Sampling Locations

Location		Monitoring Wells / Residential Bores
Source Area Bores	Former fire training area	MW562, MW563
	Former fire station	MW201, MW202, MW203, MW204, MW205
	Aqueous film forming foam (AFFF) storage and decanting area	MW222*, MW223*, MW230, MW232*
	Former fuel compound / hot refuel area	MW235, MW236, MW241
	AFFF recovery tank / hot refuel area	MW172, MW173
	AFFF recovery tank	MW299, MW300
	AFFF settling tank	MW193, MW198, MW207, MW221, MW229
On-Base boundary bores (Oakey Creek Alluvium)		MW167, MW174, MW178, MW179, MW187, MW189, MW233, MW242*, MW245, MW249, MW252 MW567*, MW568, MW569, MW570_S, MW570_D, MW571_S, MW571_D, MW572_S, MW572_D, MW573_S, MW573_D, MW574_S, MW574_D, MW575, MW576, MW577, MW578
Off-Base west and southwest of the Base		MW255*, MW257, MW262, MW276, MW272, *MW003, MW019, MW038, MW056*, MW134, MW147, MW151*
Off-Base underlying aquifers to south of the Base		*MW269*

Italics indicate residential bores.
* Wells/bores that could not be sampled during this monitoring round, refer to Section 2.1.

2.1 SAQP deviations

The October 2024 sampling event was completed in general accordance with:

- The SAQP (AECOM, 2024b).
- SAQP Addendum (GHD, 2024).
- GHD's health and safety protocols.
- GHD's standard operating procedures for field work, which have been developed in accordance with QLD contaminated land guidance.
- Directions as provided by the Base.
- Directions as provided by private landholders to access their properties.

Deviations from the SAQP and SAQP Addendum are presented in Table 2.2.

Table 2.2 Deviations from the SAQP

SAQP (AECOM 2024)	GHD approach outlined in SAQP Addendum (GHD 2024)	October 2024 Sampling Event	Impact on Ongoing Monitoring Program
Collection of groundwater samples at 47 locations	Collection of groundwater samples at 17 additional wells recently installed by JBS&G following the same methodology as the SAQP.	A total of 57 groundwater samples were collected out of the 64. **Access not granted** MW056 was not sampled as the private property at 13 Campbell Street had been sold and GHD does not have contact details of the new owners. A letter was dropped in the mailbox. **Physically inaccessible** MW222 and MW223 were not sampled because these wells had been covered in asphalt during recent resurfacing works at the Base. MW255 could not be opened as the keyholes had been stripped (Allen key head). **Dry Wells** MW232 was not sampled as it was effectively dry and there was insufficient water to collect a sample. Monitoring well MW242 had been destroyed and adjacent well MW243 has a total depth of 6.8 m below top of casing (mbtoc), which is screened at a shallower depth than MW242, and was dry. MW567 was not sampled as it was effectively dry and there was insufficient water to collect a sample. **Publically accessible wells** There are 16 publically accessible monitoring wells located in road reserves that are identified in the OMP. None require any physical access to be facilitated.	**MW056** Not being able to access this private bore reduces information on the potential migration of PFAS in groundwater in the Oakey Creek Alluvium aquifer in the southwestern extent of Management Zone 2. Action: GHD will continue efforts to contact the owner. **MW222 and MW223** The location is directly downgradient of the current fire training area, however MW221, which is part of the sampling program, further down gradient, is screened at a similar depth and targets the same aquifer and is considered adequate for assessing groundwater quality down gradient of the current fire training area. Action: SAQP/OMP to be updated to remove MW222 and MW223. **MW255** The non-sampling reduces information on the potential migration of PFAS in groundwater in the Oakey Creek Alluvium aquifer in the southwestern portion of the western boundary of Management Zone 2. Action: GHD will drill out and replace keyholes in April 2025. **MW232** This well has historically had low water levels and been sampled with a bailer. It is anticipated that following the wet season, a sample will be able to be collected in April 2025. **MW242 and MW243** MW242 is lost, MW243 may be a suitable to include in the OMP to assess shallower PFAS concentrations at this location but it would not be able to replace the data captured from MW242. It is anticipated that following the wet season, a sample may be able to be collected in April 2025. **MW567** It is anticipated that following the wet season, a sample will be able to be collected in April 2025.

SAQP (AECOM 2024)	GHD approach outlined in SAQP Addendum (GHD 2024)	October 2024 Sampling Event	Impact on Ongoing Monitoring Program
		GHD contacted Toowoomba Regional Council (TRC) to renew access beyond March 2025 and that request has not been receipted to date. The request included clarification regarding which of those 16 bores are considered TRC assets. TRC communicated to GHD on 4 October 2024 that the following bores are potentially on the TRC bore register. The OMP bore names are not consistent with the TRC bore register, therefore matching of coordinates was used by TRC to cross reference. MW282 (potentially one of three landfill leachate bores), MW274 or MW275 (potentially Bore 5) and MW276 (potentially Bore 7). No further correspondence has been received.	Action: Re-sample in the April 2025 and October 2025 rounds. Action: All dry wells will be attempted to be sampled in April 2025. **Publically accessible wells** GHD has been instructed by Defence to route all correspondence to TRC through the Defence team with regards to future access to these locations. The next sampling round scheduled for April 2025, will need to be considerate of any access constraints as instructed by Defence.
HydraSleeve™ deployment	At the completion of the October sampling event, HydraSleeves™ were to be installed in all relevant wells in preparation for the April OMP sampling round	Hydrasleeves™ were not installed in the following wells for April 2025 due to time and/or access constraints: MW265, MW266, MW274, MW275, MW278, MW279, MW280, MW281, MW282, MW290, MW291, MW292, MW293, MW296, MW297, MW270S, MW270D, MW271S, MW271D, MW272S, MW272D, MW273S, MW273D, MW274S, MW274D, MW567, MW575, MW255 MW011 at Brymaroo Satellite Site.	This does not impact the outcome of this assessment but will need to be considered in the planning of the April 2025 monitoring round to ensure Hydrasleeves™ are installed an appropriate amount of time prior to sampling.

SAQP (AECOM 2024)	GHD approach outlined in SAQP Addendum (GHD 2024)	October 2024 Sampling Event	Impact on Ongoing Monitoring Program
Sample analysis – All primary samples will be submitted for PFAS extended suite using the standard levels of detection.	While the SAQP states that samples should be analysed for the PFAS extended suite, the results presented in the previous reports are for the standard PFAS suite. Given that the primary PFAS of concern are covered with the standard PFAS suite, GHD will also adopt the standard PFAS suite. Samples will be analysed using standard levels of detection.	Samples were analysed for the standard PFAS suite using the standard levels of detection.	Given that the primary PFAS of concern are covered by the standard PFAS suite there are not considered to be any impacts on the OMP.
QC samples – the SAQP only outlines requirements for duplicates and rinsates. There is no requirement for field blanks or trip blanks to be collected.	GHD will collect QA/QC samples as follows, as this is considered standard industry practice, and will be consistent across all SAQPs and sampling conducted by GHD: – Duplicates – 1 in 10 samples – Triplicates – 1 in 10 samples – Rinsates – 1 per day of sampling off reuseable equipment – Trip blanks – 1 per laboratory batch Field blanks – as required on new equipment.	QC samples collected as outlined in the SAQP Addendum.	These changes are not considered to impact the OMP.

3. Methodology

3.1 Groundwater sampling methodology

The methodology used for the October 2024 sampling event was in general accordance with the SAQP (AECOM, 2024b) and SAQP Addendum (GHD, 2024) and is summarised in Table 3.1.

Table 3.1 Groundwater Sampling Methodology

Item	Details
Technical guidelines	Australian Standard 5667:*1998 Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples (AS 5667.1:1998)*. Australian Standard 5667:*1998 Water Quality – Sampling, Part 6: Guidance on the Sampling of rivers and streams (AS 566.6:1998)*. National Environment Protection Council (NEPC) (1999, amended 2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure* (NEPM) *(No. 1)*. Heads of Environmental Protection Authorities (HEPA) (2020). *PFAS National Environmental Management Plan (NEMP), Version 2.0* (HEPA, 2020).
Groundwater gauging	For each monitoring well, the depth to groundwater was measured using an interface probe (IP), before installing the HydraSleeves™ and prior to collecting the groundwater sample. Private bores with a tap installation were not gauged.
Quality parameter field measurements	Field measurements were taken using a calibrated water quality meter, with measurements of temperature, pH, electrical conductivity (EC), dissolved oxygen (DO) and oxidation-reduction potential (REDOX) recorded. Equipment calibration certificates are provided in Appendix E. In addition, observations of water quality such as the colour, turbidity, and the presence/absence of odour or sheen was recorded.
Sampling methodology	Groundwater samples were collected from monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in preparation for the next sampling round. Deviations are outlined in Table 2.2. Bore water samples were collected by placing the laboratory sample bottle beneath the tap and the tap slowly opened to collect the “first flush” of water. The tap was already turned on, pumping water into a dam at MW151, so the sample collected is not considered a “first flush” sample.
QA / QC samples	Field quality (QA / QC samples for this sampling event were collected in accordance with the SAQP and SAQP Addendum, including: – 6x intra-laboratory duplicates, which met the target frequency. – 6x inter-laboratory duplicates, which met the target frequency. – 5x rinsates, which met the target frequency. – 10x trip blanks, which met the target frequency. – 1x field blank, which met the target frequency. Rinsate samples were collected at the rate of one sample per fieldwork day by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment. The only reusable equipment that was decontaminated during the sampling event was the IP. Trip blanks were provided by the laboratory and were analysed at a rate of one sample per batch. A field blank was collected off the Hydrasleeve™ weight by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment. The data validation assessment is presented in Appendix C.
Sample analysis	All primary samples were submitted for analysis for the standard PFAS suite using the standard levels of detection. Australian Laboratory Services Environmental (ALS) Brisbane, QLD was used as the primary laboratory. Eurofins MGT, Brisbane, QLD was used as the secondary laboratory. ALS and Eurofins methods for groundwater analyses were certified by the National Association of Testing Authorities (NATA). Chain of Custody (COC) forms and laboratory certificates are presented in Appendix D.
Purge water	Approximately 40 L of purge water was disposed of at the OPEC water treatment system.

3.2 Adopted screening criteria

The following guidance documents were used to assess the data:

– PFAS NEMP (HEPA, 2020).
– ASC NEPM (NEPC, 2013).
– Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia.* April 2017 [updated September 2019].
– National Health and Medical Research Council (NHMRC), 2019. *Guidance on PFAS in Recreational Water*. August 2019 (NHMRC 2019).

The adopted PFAS screening criteria to assess the data generated as part of the OMP includes both human health and ecological screening criteria and are presented in Table 3.2.

Table 3.2 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFHxS and PFOS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). Recreational guidelines have not been considered in this monitoring event as all samples were collected from groundwater. *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Ecological Receptors			
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	The values are from the PFAS NEMP (HEPA, 2020). The 99% level of protection has been applied for slightly to moderately disturbed ecosystems, including groundwater where there is the potential for groundwater to discharge to a surface water system. 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, based on historical results. *All groundwater results will be compared to these criteria.*
	PFOA	19 µg/L	

NOTE: The OMP/SAQP revision will consider appropriate LORs and applicability of guidelines for future rounds.

3.3 Quality assurance and quality control

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2024b), with relevant commentary in the SAQP Addendum (GHD, 2024). The data validation assessment is provided in Appendix C.

Quality assurance involves all the actions, procedures, checks and decisions, undertaken to ensure the representativeness and integrity of samples and accuracy and reliability of analytical results (NEPC, 2013). Quality control involves protocols to monitor and measure the effectiveness of QA/QC procedures.

The relative percentage difference (RPD) for the laboratory results was calculated for each duplicate pair, as presented in Table 4, Appendix B. A number of RPD exceedances were calculated, primarily between primary and triplicate samples, indicating that there may be differences between laboratory analysis methods. For the majority of RPD exceedances, the primary and duplicate/triplicate results are the same order of magnitude and the discrepancy is unlikely to have any material impact on the results.

Trip blank, field blank and rinsate analytical results are provided in Table 5, Appendix B. All analytes tested for the trip blanks, rinsates and field blank were less than the LORs.

A review of the field and laboratory QA/QC performance from the investigation is presented in the QA/QC data validation report, Appendix C. The QA/QC assessment concluded that the collected data is considered appropriate for the work undertaken and are considered usable for the purpose of this assessment.

All data collected during this event will be reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2018, amended 2021) requirements.

4. Field observations and analytical results

The sampling event was completed between 1 and 11 October 2024. The results are summarised in the following sections.

4.1 General observations

The weather conditions and general observations (including activities that may impact the monitoring program) recorded during the October 2024 sampling event are summarised in Table 4.1.

Table 4.1 General observations

Feature	Details
Weather Conditions	Weather conditions during Hydrasleeve™ installation works on 30 September, 1 and 2 October 2024 were dry and sunny. Weather conditions during sampling varied, with heavy rain, hail and thunderstorms in the afternoon and evening of 8 and 9 October and fine conditions on 10 and 11 October 2024. The Bureau of Meteorology (BOM) station 041359 – 'Oakey Aero' recorded: – 6.4 mm of rainfall on 9 October 2024. – 9.4 mm of rainfall on 10 October 2024. The temperature on sampling days ranged from approximately 23 ºC to 33 ºC.
Estate Management Works or Training Activities	During the sampling event, no notable estate works or training activities were observed in the vicinity of the sampling locations. JBS&G works on the western boundary had minor impacts to Hydrasleeve™ deployment.

4.2 Field observations and measurements

The field observations and water quality parameter measurements recorded during the October 2024 sampling event are summarised in Table 4.2.

Table 4.2 Groundwater Observations and Field Measurements

Feature	Details
Access	All monitoring wells and bores were accessible except for those outlined in Table 2.2.
Monitoring Well Network	All well covers were noted to be in good condition except for those outlined in Table 2.2.
Field Observations	A hydrocarbon odour and sheen were noted during gauging of MW193 which is located east of Hangar C2 and close to Tank C59. The hydrocarbon contamination is associated with a known historical leak of petroleum hydrocarbons from Tank C60 in 2009 (AECOM, 2024a) and is consistent with historical observations at this location. A sulphur odour was noted during sampling of MW575. No visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented Table 1 in Appendix B. Newly installed nested wells along the western boundary were a smaller casing and required a smaller diameter Hydrasleeve™ collar for installation.
Depth to Groundwater	Depth to groundwater in the Oakey Creek Alluvium aquifer at Swartz Barracks ranged between 3.6 (MW229) and 14.85 mbtoc (MW575). Groundwater elevations in the Oakey Creek Alluvium aquifer ranged between 386.802 (MW272) and 401.933 metres Australian Height Datum (mAHD) (MW229). Depth to groundwater in MW269 in the Walloon Coal Measures was 33.35 mbtoc, with a groundwater elevation of 368.608 mAHD.

Feature	Details
	MW568, while screened at a depth indicating it was in the Walloon Coal Measures, had a depth to water of 17.76 mbtoc and a groundwater elevation of 385.08 mAHD, which is more consistent with the Oakey Creek Alluvium, indicating there may be some interconnectivity between aquifers at this location. MW567 also had a screen depth indicating it was in the Walloon Coal Measures, however it was effectively dry. Groundwater gauging data are presented in Table 1 in Appendix B.
Groundwater Flow Direction	Inferred groundwater contours and groundwater flow directions in the Oakey Creek Alluvium aquifer at Swartz Barracks in October 2024 are shown on Figure 5 in Appendix A. The inferred local groundwater flow direction is generally from east to west across the Base.
Quality Parameter Field Measurements	Groundwater quality parameters were measured prior to collecting groundwater samples. The field measurements are presented in Table 1 in Appendix B and are summarised below. **Swartz Barracks Management Area – Oakey Creek Alluvium** EC ranged from 369 µS/cm (MW233) to 6,377 µS/cm (MW204) indicating fresh to brackish conditions. pH ranged from 6.78 (MW299) to 8.20 (MW038). pH results indicated near neutral conditions to slightly alkaline conditions. ORP ranged from -355.7 mV (MW574D) to 71.9 mV (MW573_D) indicating mildly to strongly reducing conditions. Temperature ranged from 19.6 °C (MW173) to 24.4 °C (MW003). DO results ranged between 0.7 (MW236 / MW572D) and 7.6 mg/L (MW167) indicating poorly to moderately oxygenated conditions. **Swartz Barracks Management Area – Walloon Coal Measures (MW269)** EC measured 1,174 µS/cm indicating brackish conditions. pH measured 11.4 pH results indicating alkaline conditions. ORP measured -164 mV indicating moderately reducing conditions. Temperature was measured at 23.0 °C. The DO measured 2.4 mg/L indicating mildly oxygenated conditions. Based on the screen depth and standing water level of MW568, there appears to be some interconnectivity between aquifers at this location so the groundwater quality parameters from this well have not been included in the summaries above.

4.3 Groundwater analytical results

Groundwater analytical results from the current monitoring round are presented in Table 2, Appendix B and historical data is also shown in Table 3, Appendix B. In summary:

- There were no first-time detections and no new exceedances of the human health or ecological guideline values.
- Out of the 57 groundwater samples collected, 49 exceeded the NEMP (HEPA, 2020) human health drinking water guideline value for sum of PFHxS and PFOS, with 14 samples also exceeding the PFOA guideline value.
- A total of 51 groundwater samples exceeded the limit of reporting for PFOS and exceeded the NEMP (HEPA, 2020) ecological guideline for PFOS for 99% protection of freshwater ecosystems.
- One groundwater sample exceeded the NEMP (HEPA, 2020) PFOA ecological guideline value.
- On-base:
  - New maximum concentrations of sum of PFHxS and PFOS were recorded at:
    - Source area AFFF recovery tank/hot refuel area MW173 (8.04 µg/L)
    - Source Area AFFF recovery tank MW229 (60.8 µg/L)
    - Source Area Former fire training area MW562 (23.2 µg/L), and
    - North east of the runway MW252 (60.6 µg/L)
  - New maximum concentrations of PFOS were recorded at:
    - Source Area AFFF recovery tank MW229 (49.5 µg/L)
    - North of the main compound MW249 (0.22 µg/L)

    - Northern on-base boundary bore MW252 (49.5 µg/L), and
    - Source Area Former fire training area MW562 (22.0 µg/L)
  - A new maximum concentration of PFOA were recorded at MW562 (1.07 µg/L).
- Off-base:
  - New maximum concentrations of sum of PFHxS and PFOS were recorded at:
    - MW151 (0.05 µg/L) approximately 3.5 km west of the base.
  - New maximum concentrations of PFOS were recorded at:
    - MW151 (0.03 µg/L) approximately 3.5 km west of the base, and
    - MW262 (0.38 µg/L) approximately 2.5 km south west of the base

5. Summary and recommendations

5.1 Summary of monitoring event

A groundwater monitoring event was completed within and outside of the Swartz Barracks Management Area, between 1 and 11 October 2023. The program included sampling of groundwater from 57 monitoring wells and bores.

Table 5.1 summarises the findings of the October 2024 sampling event and the recommended actions.

Table 5.1 Summary of Sampling event

Item	Comment	Recommended Actions
Access to sampling locations	57 out of the 64 monitoring well / bore locations were accessible and able to be sampled. Details are outlined in Table 2.2.	The loss of the wells/bores will be considered in the 2024 Ongoing Monitoring Report (OMR) and OMP revision. Actions are outlined in Table 2.2 specific to this sampling round.
Monitoring well network condition	All well covers were noted to be in good condition, with the exception of those detailed in Table 2.2.	Actions are outlined in Table 2.2 specific to this sampling round.
Analytical Results	Groundwater samples from seven wells / bores recorded new maximum concentrations of either Sum of PFHxS and PFOS, PFOS or PFOA. PFAS concentrations were lower than or equal to historical maximum concentrations in the other groundwater samples analysed.	Ongoing monitoring in accordance with the OMP.
First-time detections of Sum of PFHxS and PFOS or PFOA	No first-time detections of PFAS above the laboratory limit of reporting were recorded in any of the 57 groundwater samples collected.	Ongoing monitoring in accordance with the OMP.
New exceedance of HEPA (2020) drinking water guideline values	No new exceedances were identified in the dataset.	Ongoing monitoring in accordance with the OMP.
New maximum detections	New maximum detections were recorded in: – Six locations for the sum of PFHxS and PFOS. – Six locations for PFOS. – One location for PFOA.	Monitor these locations in future sampling rounds to determine if this indicates an increasing trend.

5.2 Upcoming sampling events

The next sampling event is scheduled for April 2025.

5.3 Upcoming ongoing monitoring report

The next OMR is scheduled for March 2025.

6. References

AECOM. (2024a). *Sampling Event Factual Report, October 2023.*

AECOM. (2024b). *Sampling and Analysis Quality Plan.*

Australian Standard 5667:1998 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples* (AS 5667.1:1998).

Australian Standard 5667:1998 *Water Quality – Sampling, Part 6: Guidance on the Sampling of rivers and streams* (AS 566.6:1998).

Defence. (2018, Amended 2021). *Defence Contamination Management Manual.*

Defence. (2019a). *PFAS Ongoing Monitoring Plan*.

Defence. (2019b). *PFAS Management Area Plan*.

Defence. (2024). *Ongoing Monitoring Program Reporting Guidance*.

Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia.* April 2017 [updated September 2019].

GHD. (2024). *Sampling and Analysis Quality Plan Addendum*.

HEPA. (2020). *PFAS National Environmental Management Plan Version 2.0*. (NEMP). Heads of EPA Australia and New Zealand.

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

NEPC. (1999, amended 2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM) (No. 1)*. National Environment Protection Council.

Appendices

Appendix A

Figures

Legend
Site boundary
Road
Watercourse

Doctor Creek
Swartz Barracks
Old Warrego Highway
Warrego Highway
Oakey
Oakey Creek
Westbrook Creek

Dalby
Oakey
Toowoomba

Paper Size ISO A3
0 250 500 750 1,000
Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
OMP Factual Report - Oct 2024

Project No. 12638013
Revision No. A
Date 30/10/2024

Site Location

FIGURE 1

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracks\12638013_SwartzBarracks.aprx - 12638013_201_SiteLocation
Print date: 30 Oct 2024 - 13:16

Data source: AECOM: , Swartz barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics nearmap.com: . Created by: [redacted]

MANAGEMENT ZONE 1
ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors
for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from back yard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek
- Drinking home grown milk

MANAGEMENT ZONE 2
ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors
for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from back yard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek

MANAGEMENT ZONE 3
ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Eating fish from Oakey Creek

Legend
- Open drains
- Major watercourse
- Minor watercourse
- Site drains
- Site boundary
- Management area

Management zones
- Management Zone 1
- Management Zone 2
- Management Zone 3

Management Zone 1
Management Zone 2
Management Zone 3
Doctor Creek
Devon Park Boundary Road
Oakey - Cooyar Road
Bacons Road
Wilthorn Kelvinhaugh Road
Oakey Kelvinhaugh Road
Kingsthorpe Silverleigh Road
Drain 1
Drain 2
Drain 3
Drain 4
Drain 5
Orr Road
Corfe Road
Showgrounds Road
Sexton Weise Road
Old Warrego Highway
Janetzki Road
Blake Road
Racecourse Road
Keong Road
Speed Road
Kent Street
Oakey Creek
Warrego Highway
Aubigny Road
Toowoomba Road
Hamlyn Road
Hastings Road
4AK Road
Cockburn Road
Kearney Road
Oakey - Pittsworth Road
Westbrook Creek

Paper Size ISO A3
0 0.25 0.5 0.75 1
Kilometers
Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
OMP Factual Report – Oct 2024

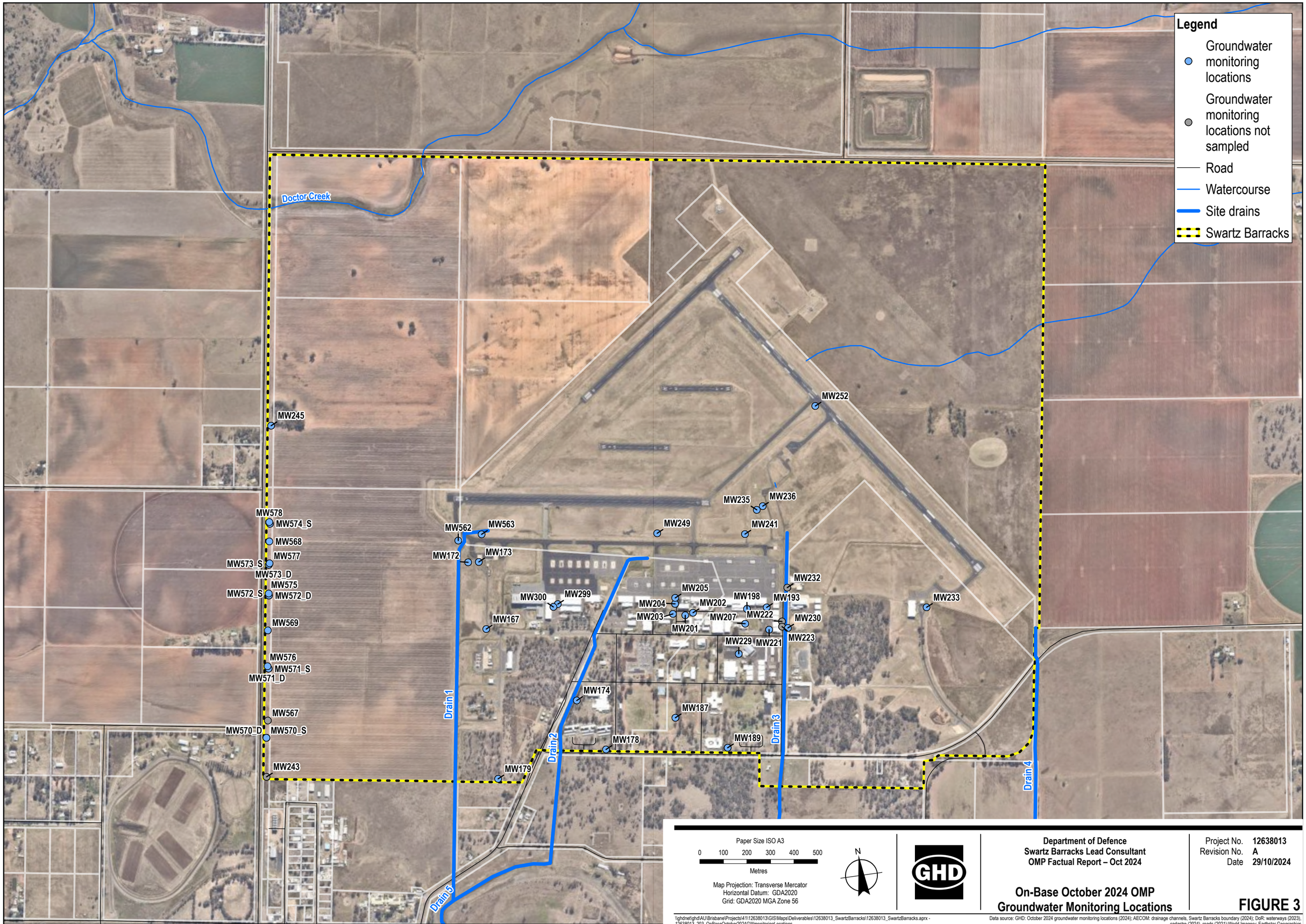
PMAP Management Zones

Project No. **12638013**
Revision No. **A**
Date **29/10/2024**

FIGURE 2

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Print date: 29 Oct 2024 - 16:06

Data source: AECOM: Brymaroo boundary, Swartz barracks boundary, management zones, management area (2024); DoR: cadastre (2024). watercourse (2023); nearmap.com: . Created by: [redacted]



Paper Size ISO A3

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

GHD

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OMP Factual Report – Oct 2024

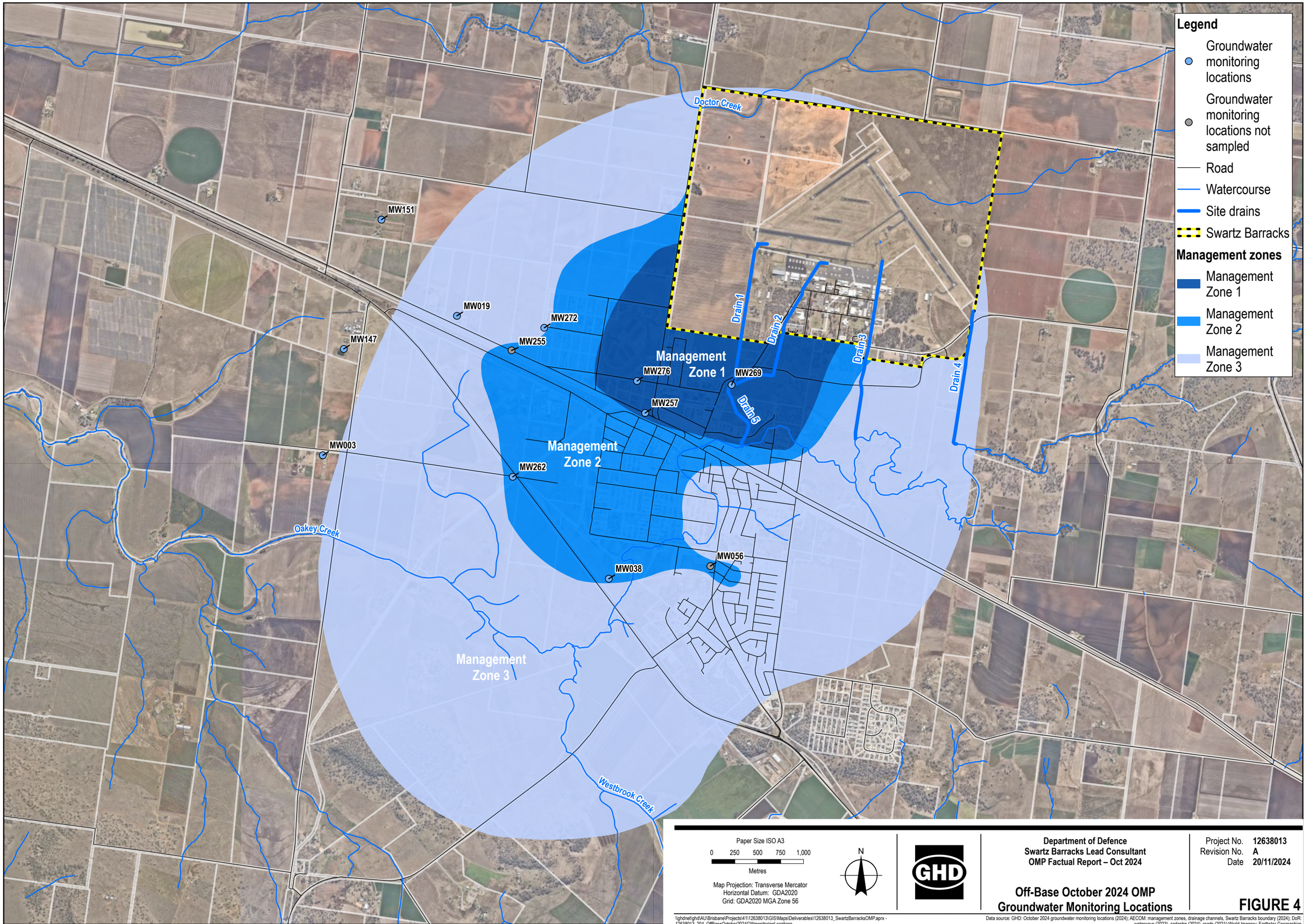
On-Base October 2024 OMP Groundwater Monitoring Locations

Project No. **12638013**
Revision No. **A**
Date **29/10/2024**

FIGURE 3

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracks\12638013_SwartzBarracks.aprx - 12638013_203_OnBaseOctober2024GWmonitoringLocations
Print date: 29 Oct 2024 - 16:29

Data source: GHD: October 2024 groundwater monitoring locations (2024); AECOM: drainage channels, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics
nearmap.com: . Created by: [redacted]



Paper Size ISO A3

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Department of Defence
Swartz Barracks Lead Consultant
OMP Factual Report – Oct 2024

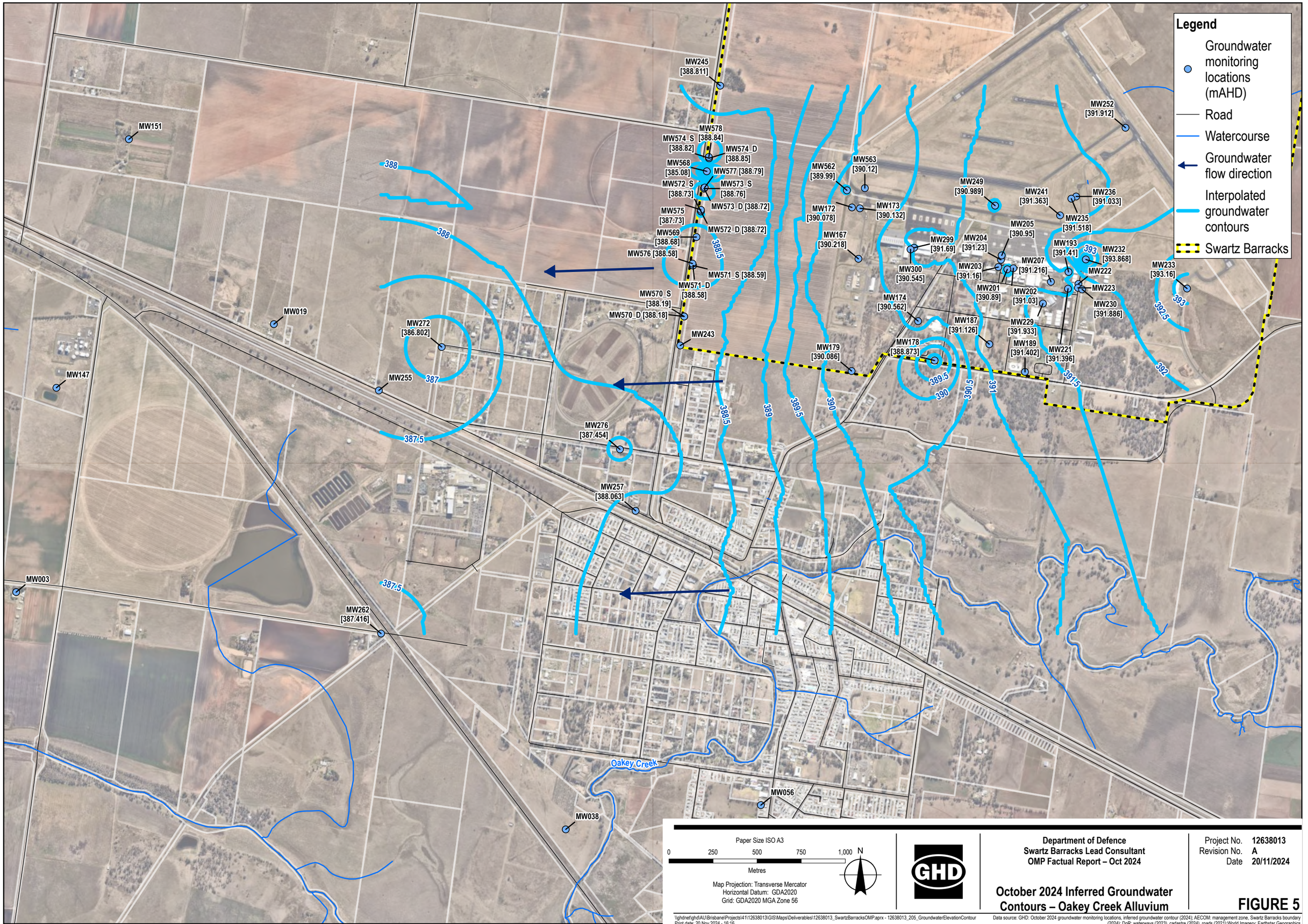
Off-Base October 2024 OMP Groundwater Monitoring Locations

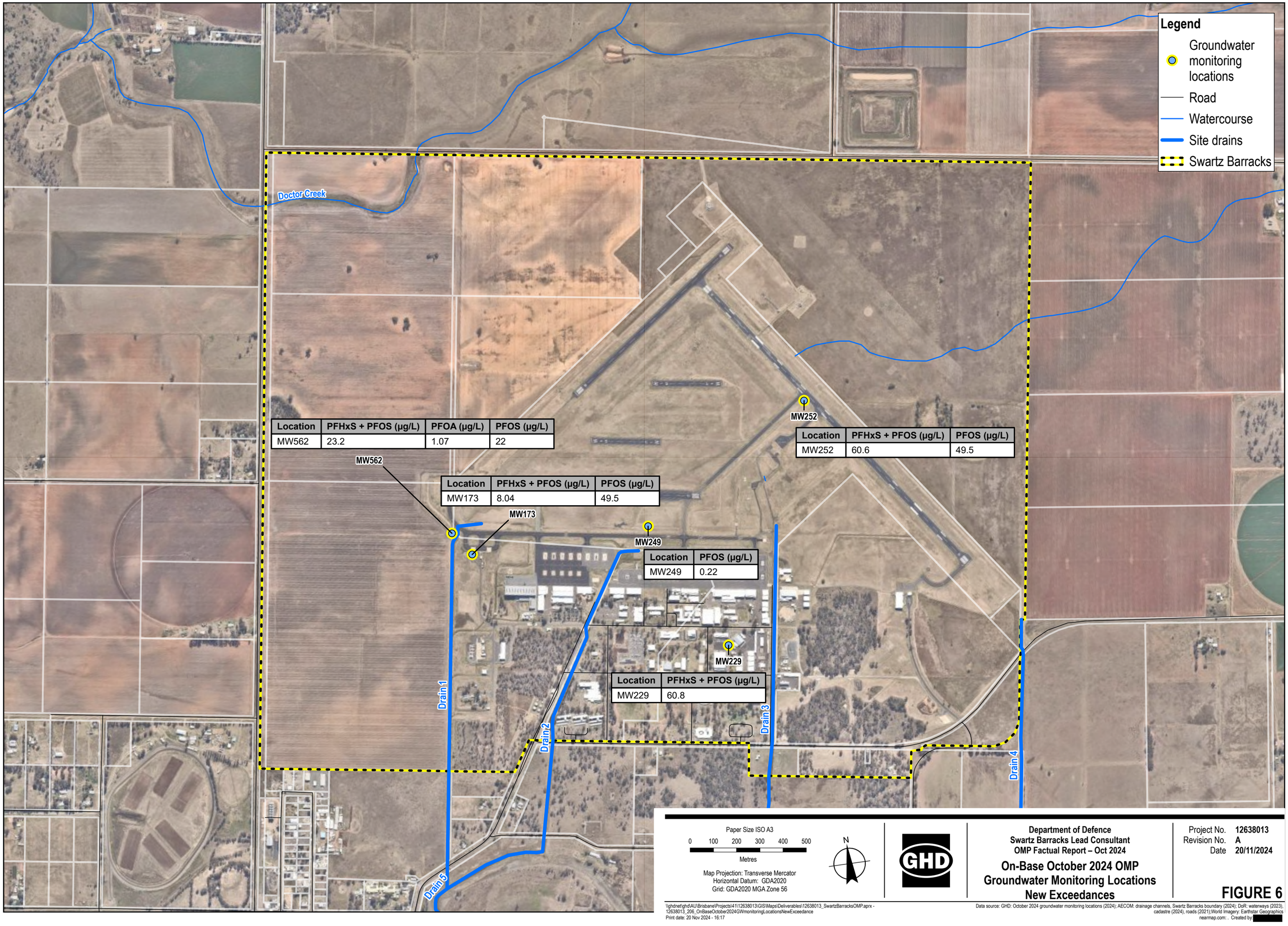
Project No. **12638013**
Revision No. **A**
Date **20/11/2024**

FIGURE 4

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMP.aprx - 12638013_204_OffBaseOctober2024GWmonitoringLocations
Print date: 20 Nov 2024 - 16:18

Data source: GHD: October 2024 groundwater monitoring locations (2024); AECOM: management zones, drainage channels, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics
nearmap.com: . Created by: [redacted]


Legend
Groundwater monitoring locations (mAHD)
Road
Watercourse
Groundwater flow direction
Interpolated groundwater contours
Swartz Barracks
MW245 [388.811]
MW578 [388.84]
MW574_S [388.82]
MW574_D [388.85]
MW568 [385.08]
MW577 [388.79]
MW572_S [388.73]
MW573_S [388.76]
MW573_D [388.72]
MW575 [387.73]
MW572_D [388.72]
MW569 [388.68]
MW576 [388.58]
MW571_S [388.59]
MW571_D [388.58]
MW570_S [388.19]
MW570_D [388.18]
MW243
MW151
MW019
MW147
MW272 [386.802]
MW255
MW276 [387.454]
MW257 [388.063]
MW003
MW262 [387.416]
MW038
MW056
Oakey Creek
MW562 [389.99]
MW563 [390.12]
MW172 [390.078]
MW173 [390.132]
MW167 [390.218]
MW179 [390.086]
MW174 [390.562]
MW178 [388.873]
MW249 [390.989]
MW241 [391.363]
MW236 [391.033]
MW235 [391.518]
MW205 [390.95]
MW299 [391.69]
MW204 [391.23]
MW300 [390.545]
MW203 [391.16]
MW207 [391.216]
MW193 [391.41]
MW232 [393.868]
MW222
MW223
MW230 [391.886]
MW233 [393.16]
MW201 [390.89]
MW202 [391.03]
MW187 [391.126]
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MW189 [391.402]
MW221 [391.396]
MW252 [391.912]
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Paper Size ISO A3
0 250 500 750 1,000
Metres
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Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56
GHD
Department of Defence
Swartz Barracks Lead Consultant
OMP Factual Report – Oct 2024
October 2024 Inferred Groundwater Contours – Oakey Creek Alluvium
Project No. 12638013
Revision No. A
Date 20/11/2024
FIGURE 5
\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMP.aprx - 12638013_205_GroundwaterElevationContour
Print date: 20 Nov 2024 - 16:16
Data source: GHD: October 2024 groundwater monitoring locations, inferred groundwater contour (2024); AECOM: management zone, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics
nearmap.com: . Created by [redacted]



Paper Size ISO A3

0 100 200 300 400 500

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

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OMP Factual Report – Oct 2024

On-Base October 2024 OMP Groundwater Monitoring Locations New Exceedances

Project No. **12638013**
Revision No. **A**
Date **20/11/2024**

FIGURE 6

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMP.aprx - 12638013_206_OnBaseOctober2024GWmonitoringLocationsNewExceedance
Print date: 20 Nov 2024 - 16:17

Data source: GHD: October 2024 groundwater monitoring locations (2024); AECOM: drainage channels, Swartz Barracks boundary (2024); DoR: waterways (2023), cadastre (2024), roads (2021);World Imagery: Earthstar Geographics nearmap.com: . Created by: [redacted]

Location	PFHxS + PFOS (µg/L)	PFOS (µg/L)
MW151	0.05	0.03

Location	PFOS (µg/L)
MW262	0.38

MW151

MW262

Doctor Creek

Oakey Creek

Westbrook Creek

Drain 1

Drain 2

Drain 3

Drain 4

Drain 5

Management Zone 1

Management Zone 2

Management Zone 3

Legend

- Groundwater monitoring locations
- Road
- Watercourse
- Site drains
- Swartz Barracks

Management zones

- Management Zone 1
- Management Zone 2
- Management Zone 3

Paper Size ISO A3

0 250 500 750 1,000

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

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OMP Factual Report – Oct 2024

Off-Base October 2024 OMP Groundwater Monitoring Locations New Exceedances

Project No. **12638013**
Revision No. **A**
Date **20/11/2024**

FIGURE 7

\\ghdnet\ghd\AU\Brisbane\Projects\41\12638013\GIS\Maps\Deliverables\12638013_SwartzBarracksOMP.aprx - 12638013_207_OffBaseOctober2024GWmonitoringLocationsNewExceedance
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nearmap.com: . Created by: [redacted]

Appendix B

Results tables

Well ID	Date HydraSleeve™ Installed	Date HydraSleeve™ Sampled / Sampled Date	Depth of HydraSleeve™ deployment (mbgl)	Well Depth (mbtoc)	TOC Elevation (mAHD)	Depth to Water (mbtoc)	Groundwater Elevation (mAHD)	Temp (°C) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	DO (mg/L) *Field measurement*	Redox (mV) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
MW003	Tap sample	9/10/2024	N/A	N/A	-	-	-	24.4	2097	7.35	3.4	-80.02	Low	Clear	No odour	No sheen	Tap sample.
MW019	Tap sample	9/10/2024	N/A	N/A	-	-	-	20.2	2215	7.21	3.1	63.7	Low-Moderate	Pale brown	No odour	No sheen	Tap sample.
MW038	Tap sample	1/10/2024	N/A	N/A	-	-	-	23.3	995	8.2	1.5	-218.5	Low	Clear	No odour	No sheen	Tap sample.
MW056	-	-	-	21.295	-	-	-	-	-	-	-	-	-	-	-	-	No access to private property obtained.
MW134	Tap sample	9/10/2024	N/A	N/A	-	-	-	21.7	1793	7.14	2.4	-88.7	Low	Clear	No odour	No sheen	Tap sample.
MW147	Tap sample	11/10/2024	N/A	N/A	-	-	-	22.1	3349	7.15	5.9	-64.5	Low	Clear	No odour	No sheen	Tap sample.
MW151	Tap sample	11/10/2024	N/A	N/A	-	-	-	22.3	1729	7.15	6.2	-48.4	Low	Clear	No odour	No sheen	Tap sample.
MW167	01/10/2024	9/10/2024	15.0	15.49	402.428	12.21	390.218	22.2	1807	7.16	7.6	-96.8	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW172	02/10/2024	10/10/2024	17.0	17.33	402.818	12.74	390.078	21	1561	7.37	3.8	-41.6	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW173	02/10/2024	10/10/2024	17.0	17.98	403.262	13.13	390.132	19.6	1745	7.34	3.5	-59.3	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW174	01/10/2024	9/10/2024	28.0	30.24	404.072	13.51	390.562	22.5	2860	7.15	1.5	-119.3	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW178	01/10/2024	9/10/2024	16.5	17.3	403.513	14.64	388.873	23.7	3585	7.07	1.8	-139.2	Low-Moderate	Pale brown	No odour	No sheen	HydraSleeve™.
MW179	01/10/2024	9/10/2024	13.0	15.01	403.006	12.92	390.086	23	2542	7.05	1.9	-110.1	Low	Clear	No odour	No sheen	HydraSleeve™.
MW187	01/10/2024	9/10/2024	18.0	18.53	404.576	13.45	391.126	22.7	3453	6.93	1	-142.7	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW189	01/10/2024	9/10/2024	21.0	20.97	404.652	13.25	391.402	22.3	4903	6.81	1.3	-198.6	Low	Clear	No odour	No sheen	HydraSleeve™.
MW193	02/10/2024	10/10/2024	19	19.43	405.63	14.22	391.41	23.4	4696	6.95	4.1	-165.3	Low-Moderate	Clear on top, grey on bottom	Strong hydrocarbon odour	Sheen	HydraSleeve™.
MW198	02/10/2024	10/10/2024	13.0	13.41	405.505	7.65	397.855	22.4	3594	7.13	3.3	-105.5	Low	Clear	No odour	No sheen	HydraSleeve™.
MW201	01/10/2024	9/10/2024	19.0	19.95	404.8	13.91	390.89	22	5213	6.99	1.2	-74.3	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW202	01/10/2024	9/10/2024	18.5	19.39	405	13.97	391.03	22.6	2202	7.37	3.5	-27.2	Low-Moderate	Clear on top, pale orange on bottom	No odour	No sheen	HydraSleeve™.
MW203	01/10/2024	9/10/2024	19.0	20.34	405.1	13.94	391.16	22.2	3730	7.03	2.5	-53	Low	Clear, slightly cloudy	No odour	No sheen	HydraSleeve™.
MW204	01/10/2024	9/10/2024	19.0	20.1	405.2	13.97	391.23	21.9	6377	7.12	2.8	-59	Low	Clear	No odour	No sheen	HydraSleeve™.
MW205	01/10/2024	9/10/2024	19.0	20.07	405.7	14.75	390.95	23	4122	6.93	3.1	-46.3	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW207	02/10/2024	10/10/2024	19.0	20.45	405.416	14.2	391.216	23.7	3773	7.18	1.9	-147.9	Low-Moderate	Pale brown/cloudy on top, brown on bottom	No odour	No sheen	HydraSleeve™.
MW221	02/10/2024	9/10/2024	19.0	19.14	405.496	14.1	391.396	22.7	1804	7.25	2.1	-106.1	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW222	02/10/2024	10/10/2024	19.0	19.01	405.716	-	-	-	-	-	-	-	-	-	-	-	Lost beneath asphalt.
MW223	02/10/2024	10/10/2024	19.5	20.92	405.845	-	-	-	-	-	-	-	-	-	-	-	Lost beneath asphalt.
MW229	02/10/2024	9/10/2024	14.5	15.54	405.533	3.6	401.933	24.2	1482	7.67	1.4	-152.3	Low	Clear	No odour	No sheen	HydraSleeve™.
MW230	02/10/2024	9/10/2024	19.0	19.09	405.416	13.53	391.886	22.1	1667	7.12	2.6	-112.2	Low	Clear	No odour	No sheen	HydraSleeve™.
MW232	02/10/2024	10/10/2024	11.0	12.08	405.898	12.03	393.868	-	-	-	-	-	-	Dry - no sample	-	-	No sample collected - well effectively dry.
MW233	02/10/2024	10/10/2024	17.5	17.78	406.47	13.31	393.16	21.8	369	7.15	4.3	-63.1	Moderate-High	Pale brown on top, brown on bottom	No odour	No sheen	HydraSleeve™
MW235	02/10/2024	10/10/2024	14.5	22.27	406.308	14.79	391.518	21.6	1790	7	2.4	-84.9	Low	Clear	No odour	No sheen	HydraSleeve™
MW236	02/10/2024	10/10/2024	16.0	16.88	405.653	14.62	391.033	21.1	1320	6.87	0.7	-108.9	Low	Clear	No odour	No sheen	HydraSleeve™ - HydraSleeve™ only half full.
MW241	02/10/2024	10/10/2024	17.0	18.1	405.883	14.52	391.363	21.6	734	7.29	3.8	-53.1	Low	Clear	No odour	No sheen	HydraSleeve™.
MW242	-	-	19.0	20.03	-	-	-	-	-	-	-	-	-	-	-	-	Well Destroyed.
MW243	-	-	-	6.831	-	-	-	-	-	-	-	-	-	-	-	-	-
MW245	30/09/2024	8/10/2024	20.0	22.09	402.981	14.17	388.811	22	1724	6.91	4.4	-172.6	Low	Clear	No odour	No sheen	Shallow well - dry.
MW249	02/10/2024	10/10/2024	18.5	18.94	404.769	13.78	390.989	21.5	1461	7.38	5.1	-63	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW252	02/10/2024	10/10/2024	15.5	16.59	406.162	14.25	391.912	22.2	611	7.02	1.5	-83.1	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW255	-	-	23.0	24.06	397.784	-	-	-	-	-	-	-	-	-	-	-	Could not open - keyholes stripped.
MW257	01/10/2024	9/10/2024	23.0	24.4	400.833	12.77	388.063	22.3	2609	7.21	0.7	-239	Low-Moderate	Clear on top, black suspended sediment on bottom	No odour	No sheen	HydraSleeve™.
MW262	01/10/2024	9/10/2024	16.7	18.24	398.329	10.91	387.419	22.6	1751	7.14	3.2	-93.5	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW269	01/10/2024	10/10/2024	86.0	89.95	401.958	33.35	368.608	23	1174	11.36	2.4	-163.5	Low	Clear	No odour	No sheen	HydraSleeve™.
MW272	01/10/2024	9/10/2024	19.0	20.12	397.972	11.17	386.802	21.5	2376	7.22	3.5	-27.2	Low-Moderate	Clear on top, orange on bottom	No odour	No sheen	HydraSleeve™.
MW276	01/10/2024	9/10/2024	19.0	20.28	400.474	13.02	387.454	23	2044	7.12	1.1	-156.1	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW299	02/10/2024	10/10/2024	12	12.11	403.97	12.28	391.69	21.9	5538	6.78	0.8	-76	Low	Clear	No odour	No sheen	HydraSleeve™.
MW300	02/10/2024	10/10/2024	15.0	15.48	403.715	13.17	390.545	22	4558	6.87	1.6	-55.8	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW562	02/10/2024	10/10/2024	15.5	16.68	402.72	12.73	389.99	20.7	1382	7.16	5.2	-50.9	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™.
MW563	02/10/2024	10/10/2024	18.5	19.63	402.9	12.78	390.12	21.4	1360	7.18	1.3	-94.9	Low-Moderate	Clear on top,orange on bottom	No odour	No sheen	HydraSleeve™.
MW567	30/09/2024	10/10/2024	42.8	42.93	402.12	39.22	362.9	-	-	-	-	-	-	Dry - no sample	-	-	No sample collected - well effectively dry.
MW568	30/09/2024	8/10/2024	45.2	46.39	402.84	17.76	385.08	20.9	1099	9.8	2.1	-300	Low	Clear	No odour	No sheen	HydraSleeve™.
MW569	30/09/2024	10/10/2024	29.2	31.11	402.5	13.82	388.68	21.9	1596	7.51	1	-191.6	Low-Moderate	Clear on top, brown on bottom	No odour	No sheen	HydraSleeve™.
MW570_S	30/09/2024	10/10/2024	20.34	21.15	402.04	13.85	388.19	22	1629	7.64	3.2	-133.6	Low	Clear on top, cloudy on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW570_D	30/09/2024	10/10/2024	28.45	29.39	402.04	13.86	388.18	21.9	1811	7.54	2.9	9.1	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW571_S	30/09/2024	10/10/2024	23.6	24.51	402.23	13.64	388.59	22.1	1972	7.32	1.9	-130.3	Low-Moderate	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW571_D	30/09/2024	10/10/2024	30.13	30.87	402.23	13.65	388.58	21.5	1529	7.49	5.3	-95	Low	Clear	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW572_S	30/09/2024	10/10/2024	25.9	25.93	402.51	13.78	388.73	22.1	1533	7.22	3	-118.6	Low-Moderate	Clear on top, pale brown for half, brown for bottom 5 cm	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW572_D	30/09/2024	10/10/2024	30.45	31.2	402.51	13.79	388.72	22	1445	7.21	0.7	24.8	Low	Clear on top, pale yellow on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW573_S	30/09/2024	10/10/2024	23.89	24.77	402.62	13.86	388.76	21.4	1559	7.06	3.7	-156.1	Low	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW573_D	30/09/2024	10/10/2024	29.25	30.04	402.62	13.9	388.72	20.5	1555	7.04	1.5	71.9	Low	Clear on top, pale brown on bottom	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW574_S	8/10/2024	8/10/2024	23.65	23.74	402.89	14.07	388.82	22	1358	7.52	2	-324.5	Moderate	Pale brown	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW574_D	8/10/2024	8/10/2024	22.84	23.12	402.89	14.04	388.85	21.6	1494	7.51	1.4	-355.7	Low	Clear	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW575	30/09/2024	10/10/2024	19.73	20.73	402.58	14.85	387.73	21.6	1715	7.17	1	-222.1	Low	Clear/cloudy	No odour	No sheen	HydraSleeve™. No HydraSleeve™ installed for April.
MW576	30/09/2024	10/10/2024	18.8	19.55	402.31	13.73	388.58	21.9	2211	7.63	1.9	-148.6	Low-Moderate	Clear, 4cm of brown sediment on bottom	No odour	No sheen	HydraSleeve™.
MW577	30/09/2024	10/10/2024	17.15	18	402.7	13.91	388.79	21.9	2194	7.48	2.1	-135.2	Moderate	Clear/cloudy on top, 4 cm brown sediment on bottom	No odour	No sheen	HydraSleeve™.
MW578	30/09/2024	8/10/2024	20.34	23.12	402.87	14.03	388.84	22.9	1966	7.04	3.8	-163	Low-Moderate	Clear top, orange bottom	No odour	No sheen	HydraSleeve™.

*No LNAPL was encountered.

									PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
									Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
									µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR									0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems													*0.00023*										*19*					
PFAS NEMP 2.0 2020 Health Drinking Water													**0.07**			**0.07**							**0.56**					
Site ID	**Location**	**Date**	**Field ID**	**Lab Report**	**Monitoring Round**	**Sample Type**																						
0207	MW003	09 Oct 2024	0207_MW003_241009	EB2432615	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW019	09 Oct 2024	0207_MW019_241009	EB2432621	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW038	01 Oct 2024	0207_MW038_241001	EB2432633	0207_PFASOMP_OCT_24	Normal	0.05	<0.02	<0.02	0.02	***0.70***	<0.02	0.05	**0.33**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW038	01 Oct 2024	0207_QC101_241001	EB2432633	0207_PFASOMP_OCT_24	Field_D	0.05	<0.02	<0.02	0.02	***0.66***	<0.02	0.05	**0.32**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW038	01 Oct 2024	0207_QC201_241001	EB2432633	0207_PFASOMP_OCT_24	Field_D	0.06	<0.02	<0.02	0.03	***0.71***	<0.02	0.05	**0.32**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW134	09 Oct 2024	0207_MW134_241009	EB2432638	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW147	11 Oct 2024	0207_MW147_241011	EB2432640	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW151	11 Oct 2024	0207_MW151_241011	EB2432643	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	*0.03*	-	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW167	09 Oct 2024	0207_MW167_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	0.54	<0.02	-	0.26	***4.86***	-	0.54	**2.51**	0.2	<0.02	<0.02	0.17	1.21	<0.02	0.34	0.33	<0.05	<0.02	<0.02	<0.05		
0207	MW172	10 Oct 2024	0207_MW172_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	0.56	<0.05[#1]	-	0.20	***5.56***	-	0.57	**3.07**	1.0	<0.05[#1]	<0.05[#1]	0.86	1.85	0.07	**0.66**	4.79	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]		
0207	MW173	10 Oct 2024	0207_MW173_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	0.46	<0.02	-	0.26	***4.16***	-	0.56	**3.88**	0.6	0.04	<0.02	0.96	2.31	0.18	**0.83**	2.21	<0.05	<0.02	<0.02	<0.05		
0207	MW173	10 Oct 2024	0207_QC104_241010	EB2432583	0207_PFASOMP_OCT_24	Field_D	0.42	<0.02	-	0.17	***2.88***	-	0.40	**2.72**	0.4	0.03	<0.02	0.77	1.76	0.14	**0.59**	1.39	<0.05	<0.02	<0.02	<0.05		
0207	MW173	10 Oct 2024	0207_QC204_241010	1148776	0207_PFASOMP_OCT_24	Interlab_D	0.40	<0.01	<0.01	0.14[#2]	***2.7***[#2]	0.17	0.40[#2]	**3.2**[#2]	0.48	0.02	<0.01	0.68[#2]	2.0	0.11[#2]	**0.56**[#2]	1.5	<0.01	<0.01	<0.01	-		
0207	MW174	09 Oct 2024	0207_MW174_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW178	09 Oct 2024	0207_MW178_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW178	09 Oct 2024	0207_QC103_241009	EB2432583	0207_PFASOMP_OCT_24	Field_D	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW178	09 Oct 2024	0207_QC203_241009	1148776	0207_PFASOMP_OCT_24	Interlab_D	<0.01	<0.01	<0.01	<0.01	*<0.01*	<0.01	<0.01	0.01[#2]	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-		
0207	MW179	09 Oct 2024	0207_MW179_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	0.48	<0.02	-	0.24	***3.45***	-	0.43	**2.13**	0.2	<0.02	<0.02	0.20	1.33	<0.02	0.34	0.30	<0.05	<0.02	<0.02	<0.05		
0207	MW189	09 Oct 2024	0207_MW189_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	***0.09***	-	0.02	**0.10**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW193	10 Oct 2024	0207_MW193_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	2.49	<0.05[#1]	-	0.98	***9.64***	-	2.78	**15.9**	9.0	<0.05[#1]	<0.05[#1]	1.42	6.22	<0.05[#1]	**2.05**	1.88	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]		
0207	MW198	10 Oct 2024	0207_MW198_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	0.51	<0.05[#1]	-	0.68	***13.6***	-	0.58	**4.55**	0.4	<0.05[#1]	<0.05[#1]	0.44	1.74	<0.05[#1]	**0.78**	0.92	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]		
0207	MW201	09 Oct 2024	0207_MW201_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	10.6	<0.10[#1]	-	5.77	***15.1***	-	12.0	**73.8**	2.3	<0.10[#1]	<0.10[#1]	2.31	17.3	<0.10[#1]	**5.62**	4.00	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.24[#1]		
0207	MW202	09 Oct 2024	0207_MW202_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	2.94	<0.42[#1]	-	2.35	***168***	-	3.90	**35.4**	<2.1[#1]	<0.42[#1]	<0.42[#1]	1.13	7.43	<0.42[#1]	**3.44**	1.68	<1.05[#1]	<0.42[#1]	<0.42[#1]	<1.05[#1]		
0207	MW203	09 Oct 2024	0207_MW203_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	1.00	<0.02	-	0.09	***0.67***	-	0.86	**4.41**	0.2	<0.02	<0.02	0.14	1.38	<0.02	0.11	0.40	<0.05	<0.02	<0.02	<0.05		
0207	MW204	09 Oct 2024	0207_MW204_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	116	<5.00[#1]	-	37.5	***338***	-	111	**712**	28.5	<5.00[#1]	<5.00[#1]	21.0	146	<5.00[#1]	***41.0***	33.0	<12.5[#1]	<5.00[#1]	<5.00[#1]	<12.5[#1]		
0207	MW204	09 Oct 2024	0207_QC102_241009	EB2432583	0207_PFASOMP_OCT_24	Field_D	120	<5.00[#1]	-	40.5	***310***	-	122	**712**	<250[#1]	<5.00[#1]	<5.00[#1]	21.5	142	<5.00[#1]	***39.5***	32.5	<12.5[#1]	<5.00[#1]	<5.00[#1]	<12.5[#1]		
0207	MW204	09 Oct 2024	0207_QC202_241009	1148776	0207_PFASOMP_OCT_24	Interlab_D	110	<0.1[#3]	<0.1[#3]	53[#2]	***300***[#2]	58	110[#2]	**790**[#2]	21	<0.01	<0.01	16[#2]	170	0.26[#2]	***46***[#2]	41	<0.01	<0.01	<0.01	-		
0207	MW205	09 Oct 2024	0207_MW205_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	2.20	<0.05[#1]	-	<0.26[#1]	***2.98***	-	2.16	**10.7**	0.5	<0.05[#1]	<0.05[#1]	0.31	3.33	<0.05[#1]	0.27	0.96	<0.13[#1]	<0.05[#1]	<0.05[#1]	<0.13[#1]		
0207	MW207	10 Oct 2024	0207_MW207_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	0.18	<0.02	-	<0.06[#1]	***0.84***	-	0.17	**1.21**	<0.2[#1]	<0.02	<0.02	0.05	0.16	<0.02	0.05	0.06	<0.05	<0.02	<0.02	<0.05		
0207	MW221	09 Oct 2024	0207_MW221_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	0.36	<0.02	-	0.15	***2.04***	-	0.36	**1.95**	<0.2[#1]	<0.02	<0.02	0.20	0.80	<0.04[#1]	0.32	0.26	<0.05	<0.02	<0.02	<0.05		
0207	MW229	09 Oct 2024	0207_MW229_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	1.07	<0.09[#1]	-	<0.89[#1]	***49.5***	-	<0.89[#1]	**11.3**	<4.5[#1]	<0.09[#1]	<0.09[#1]	<0.89[#1]	2.77	<0.09[#1]	**<0.89**[#1]	<0.89[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.22[#1]		
0207	MW230	09 Oct 2024	0207_MW230_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	0.50	<0.02	-	0.20	***4.20***	-	0.52	**3.07**	2.1	0.04	<0.02	4.33	5.86	1.01	**2.90**	7.90	<0.05	<0.02	<0.02	<0.05		
0207	MW233	10 Oct 2024	0207_MW233_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	0.09	<0.02	-	<0.04[#1]	***0.29***	-	0.07	**0.46**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.11	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.05		
0207	MW235	10 Oct 2024	0207_MW235_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	7.13	<0.05[#1]	-	<0.48[#1]	***3.39***	-	4.64	**9.81**	1.3	<0.05[#1]	<0.05[#1]	0.37	9.14	<0.05[#1]	0.29	2.03	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]		
0207	MW236	10 Oct 2024	0207_MW236_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	2.82	<0.05[#1]	-	<0.46[#1]	***4.63***	-	2.31	**12.4**	<2.3[#1]	<0.05[#1]	<0.05[#1]	0.46	4.40	<0.05[#1]	**0.83**	0.60	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]		
0207	MW241	10 Oct 2024	0207_MW241_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.22[#1]	<0.02	-	0.06	***4.86***	-	0.14	**0.98**	<0.1	<0.02	<0.02	0.03	0.16	<0.02	0.08	0.06	<0.05	<0.02	<0.02	<0.05		
0207	MW245	08 Oct 2024	0207_MW245_241008	EB2432583	0207_PFASOMP_OCT_24	Normal	0.04	<0.02	-	<0.04[#1]	***0.10***	-	<0.04[#1]	**0.20**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.06	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.05		
0207	MW249	10 Oct 2024	0207_MW249_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	1.12	<0.02	-	0.05	***0.22***	-	1.12	**4.05**	0.4	<0.02	<0.02	0.19	1.61	<0.02	0.08	0.38	<0.05	<0.02	<0.02	<0.05		
0207	MW252	10 Oct 2024	0207_MW252_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	2.48	<0.09[#1]	-	<0.88[#1]	***49.5***	-	2.12	**11.1**	<4.4[#1]	<0.09[#1]	<0.09[#1]	<0.88[#1]	3.27	<0.88[#1]	**<0.88**[#1]	1.15	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.22[#1]		
0207	MW257	09 Oct 2024	0207_MW257_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	<0.05[#1]	<0.02	-	<0.02	***0.13***	-	<0.02	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05		
0207	MW262	09 Oct 2024	0207_MW262_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	0.10	<0.02	-	0.03	***0.38***	-	0.07	**0.36**	<0.1	<0.02	<0.02	0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05		

									PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											
									Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
									µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR									0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems													*0.00023*										*19*					
PFAS NEMP 2.0 2020 Health Drinking Water													**0.07**			**0.07**							**0.56**					
Site ID	**Location**	**Date**	**Field ID**	**Lab Report**	**Monitoring Round**	**Sample Type**																						
0207	MW269	09 Oct 2024	0207_MW269_241009	EB2432644	0207_PFASOMP_OCT_24	Normal	<0.02	<0.02	-	<0.02	***0.04***	-	<0.02	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05
0207	MW272	09 Oct 2024	0207_MW272_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	0.07	<0.02	-	<0.02	***0.14***	-	0.08	**0.44**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.02	0.02	<0.05	<0.02	<0.02	<0.02	<0.05
0207	MW276	09 Oct 2024	0207_MW276_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	0.83	<0.05[#1]	-	0.34	***9.10***	-	0.90	**6.42**	0.3	<0.05[#1]	<0.05[#1]	0.22	1.32	<0.05[#1]	0.46	0.28	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
0207	MW299	10 Oct 2024	0207_MW299_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	4.20	<0.05[#1]	-	<0.49[#1]	***12.1***	-	3.32	**11.7**	0.8	<0.05[#1]	<0.05[#1]	1.41	6.98	<0.05[#1]	**1.70**	1.44	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
0207	MW300	10 Oct 2024	0207_MW300_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	3.90	<0.09[#1]	-	2.82	***43.9***	-	4.43	**24.4**	1.2	<0.09[#1]	<0.09[#1]	1.69	7.84	<0.09[#1]	**4.40**	2.05	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.22[#1]
0207	MW562	10 Oct 2024	0207_MW562_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	4.69	<0.09[#1]	-	<0.93[#1]	***1.20***	-	4.48	**22.0**	1.1	<0.09[#1]	<0.09[#1]	0.85	6.06	<0.09[#1]	**1.07**	1.71	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.23[#1]
0207	MW563	10 Oct 2024	0207_MW563_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	0.13	<0.02	-	<0.04[#1]	***0.05***	-	0.08	**0.27**	<0.1	<0.02	<0.02	<0.02	0.19	<0.02	0.03	0.10	<0.05	<0.02	<0.02	<0.02	<0.05
0207	MW568	08 Oct 2024	0207_MW568_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.03[#1]	<0.02	-	<0.02	*<0.02[#1]*	-	<0.02	<0.03[#1]	<0.1	<0.02	<0.02	<0.04[#1]	0.14	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.02	-
0207	MW569	10 Oct 2024	0207_MW569_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.46	<0.02	-	<0.04[#1]	***0.08***	-	0.17	**0.36**	<0.1	<0.02	<0.02	0.10	0.63	<0.02	0.16	0.15	<0.05	<0.02	<0.02	<0.02	-
0207	MW570	10 Oct 2024	0207_MW570_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.05	<0.02	-	<0.04[#1]	***0.29***	-	0.04	**0.40**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.09	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.02	-
0207	MW570	10 Oct 2024	0207_MW570_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.06	<0.02	-	0.02	***0.25***	-	0.07	**0.45**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.06	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.02	-
0207	MW570	10 Oct 2024	0207_QC106_241010	EB2432603	0207_PFASOMP_OCT_24	Field_D	0.07	<0.02	-	<0.04[#1]	***0.35***	-	0.08	**0.43**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	<0.02	-
0207	MW570	10 Oct 2024	0207_QC206_241010	1148785	0207_PFASOMP_OCT_24	Interlab_D	0.11	<0.01	<0.01	0.06[#2]	***0.44*** [#2]	0.04	0.11[#2]	**0.78**[#2]	<0.05	<0.01	<0.01	0.03[#2]	0.20	<0.01	0.04[#2]	0.04	<0.01	<0.01	<0.01	-
0207	MW571	10 Oct 2024	0207_MW571_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.20	<0.02	-	0.07	***1.23***	-	0.17	**1.05**	<0.1	<0.02	<0.02	0.06	0.30	<0.02	0.10	0.09	<0.05	<0.02	<0.02	<0.02	-
0207	MW571	10 Oct 2024	0207_MW571_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.38	<0.02	-	0.20	***2.78***	-	0.38	**2.49**	<0.2[#1]	<0.02	<0.02	0.08	0.55	<0.02	0.14	0.08	<0.05	<0.02	<0.02	<0.02	-
0207	MW572	10 Oct 2024	0207_MW572_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.74	<0.02	-	0.23	***2.65***	-	0.74	**2.92**	0.2	<0.02	<0.02	0.19	1.14	<0.02	0.27	0.28	<0.05	<0.02	<0.02	<0.02	-
0207	MW572	10 Oct 2024	0207_MW572_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.78	<0.02	-	0.15	***2.46***	-	0.65	**3.30**	0.2	<0.02	<0.02	0.21	1.28	<0.02	0.28	0.31	<0.05	<0.02	<0.02	<0.02	-
0207	MW573	10 Oct 2024	0207_MW573_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.71	<0.02	-	0.17	***2.60***	-	0.62	**3.14**	0.4	<0.02	<0.02	0.21	1.18	<0.02	0.28	0.29	<0.05	<0.02	<0.02	<0.02	-
0207	MW573	10 Oct 2024	0207_MW573_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.80	<0.02	-	0.24	***2.83***	-	0.82	**3.53**	<0.2[#1]	<0.02	<0.02	0.22	1.21	<0.04[#1]	0.27	0.32	<0.05	<0.02	<0.02	<0.02	-
0207	MW574	08 Oct 2024	0207_MW574_D_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	0.09	<0.02	-	<0.02	***0.16***	-	0.08	**0.43**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.09	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.02	-
0207	MW574	08 Oct 2024	0207_MW574_S_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	0.10	<0.02	-	<0.04[#1]	***0.18***	-	0.08	**0.41**	<0.1	<0.02	<0.02	<0.02	0.14	<0.02	0.02	0.04	<0.05	<0.02	<0.02	<0.02	-
0207	MW575	10 Oct 2024	0207_MW575_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	0.47	<0.02	-	0.18	***2.22***	-	0.42	**2.56**	<0.1	<0.02	<0.02	0.11	0.66	<0.02	0.16	0.17	<0.05	<0.02	<0.02	<0.02	-
0207	MW575	10 Oct 2024	0207_QC105_241010	EB2432603	0207_PFASOMP_OCT_24	Field_D	0.46	<0.02	-	0.18	***2.25***	-	0.48	**2.72**	<0.2[#1]	<0.02	<0.02	0.11	0.65	<0.02	0.16	0.17	<0.05	<0.02	<0.02	<0.02	-
0207	MW575	10 Oct 2024	0207_QC205_241010	1148785	0207_PFASOMP_OCT_24	Interlab_D	0.44	<0.01	<0.01	0.11[#2]	***2.4*** [#2]	0.18	0.42[#2]	**2.3**[#2]	0.12	<0.01	<0.01	0.10[#2]	0.79	<0.01	0.14[#2]	0.19	<0.01	<0.01	<0.01	-
0207	MW576	10 Oct 2024	0207_MW576_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.04[#1]	<0.02	-	<0.04[#1]	***0.23***	-	<0.04[#1]	**0.17**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	<0.02	-
0207	MW577	10 Oct 2024	0207_MW577_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.04[#1]	<0.02	-	<0.04[#1]	*<0.04[#1]*	-	<0.04[#1]	<0.04[#1]	<0.1	<0.02	<0.02	<0.04[#1]	<0.04[#1]	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.02	-
0207	MW578	08 Oct 2024	0207_MW578_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	0.05	<0.02	-	<0.04[#1]	***0.24***	-	0.05	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	<0.02	-

Comments
#1 Reported Analyte LOR is higher than Requested Analyte LOR
#2 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#3 The LORs have been raised due to matrix interference

									PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums				
									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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
									µg/L	µg/L	µg/L	µg/L	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	0.02	0.05	0.05	0.02	0.05	0.02	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																								
PFAS NEMP 2.0 2020 Health Drinking Water																							**0.07**	
Site ID	**Location**	**Date**	**Field ID**	**Lab Report**	**Monitoring Round**	**Sample Type**																		
0207	MW003	09 Oct 2024	0207_MW003_241009	EB2432615	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-
0207	MW019	09 Oct 2024	0207_MW019_241009	EB2432621	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	**0.07**	-
0207	MW038	01 Oct 2024	0207_MW038_241001	EB2432633	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	1.18	-	**1.03**	-
0207	MW038	01 Oct 2024	0207_QC101_241001	EB2432633	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.20	1.13	-	**0.98**	-
0207	MW038	01 Oct 2024	0207_QC201_241001	EB2432633	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.27	1.19	-	**1.03**	-
0207	MW134	09 Oct 2024	0207_MW134_241009	EB2432638	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	**0.20**	-
0207	MW147	11 Oct 2024	0207_MW147_241011	EB2432640	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-
0207	MW151	11 Oct 2024	0207_MW151_241011	EB2432643	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	0.05	-
0207	MW167	09 Oct 2024	0207_MW167_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	11.0	10.2	-	**7.37**	-
0207	MW172	10 Oct 2024	0207_MW172_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	1.49	0.29	21.0	20.1	-	**8.63**	-
0207	MW173	10 Oct 2024	0207_MW173_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.71	<0.05	17.2	16.1	-	**8.04**	-
0207	MW173	10 Oct 2024	0207_QC104_241010	EB2432583	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.74	<0.05	12.6	11.7	-	**5.60**	-
0207	MW173	10 Oct 2024	0207_QC204_241010	1148776	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	0.65	0.02	13.03	12.19	3.26	**5.9**	6.46
0207	MW174	09 Oct 2024	0207_MW174_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.09	<0.05	0.15	0.15	-	0.06	-
0207	MW178	09 Oct 2024	0207_MW178_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-
0207	MW178	09 Oct 2024	0207_QC103_241009	EB2432583	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-
0207	MW178	09 Oct 2024	0207_QC203_241009	1148776	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.1	<0.05	<0.01	0.01	0.01
0207	MW179	09 Oct 2024	0207_MW179_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.10	8.43	-	**5.58**	-
0207	MW189	09 Oct 2024	0207_MW189_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.14	<0.05	0.37	0.35	-	**0.19**	-
0207	MW193	10 Oct 2024	0207_MW193_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.06	<0.05	52.4	48.7	-	**25.5**	-
0207	MW198	10 Oct 2024	0207_MW198_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.07	<0.05	24.3	23.0	-	**18.2**	-
0207	MW201	09 Oct 2024	0207_MW201_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.51	<0.10[#1]	149	132	-	**88.9**	-
0207	MW202	09 Oct 2024	0207_MW202_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<1.05[#1]	<0.42[#1]	<1.05[#1]	<1.05[#1]	<0.42[#1]	<1.05[#1]	<4.20[#1]	<0.42[#1]	<0.42[#1]	0.46	<0.42[#1]	227	220	-	**203**	-
0207	MW203	09 Oct 2024	0207_MW203_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.26	8.31	-	**5.08**	-
0207	MW204	09 Oct 2024	0207_MW204_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<12.5[#1]	<5.00[#1]	<12.5[#1]	<12.5[#1]	<5.00[#1]	<12.5[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	1,580	1,440	-	**1,050**	-
0207	MW204	09 Oct 2024	0207_QC102_241009	EB2432583	0207_PFASOMP_OCT_24	Field_D	<12.5[#1]	<5.00[#1]	<12.5[#1]	<12.5[#1]	<5.00[#1]	<12.5[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	1,540	1,380	-	**1,020**	-
0207	MW204	09 Oct 2024	0207_QC202_241009	1148776	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.02	0.59	<0.01	1,715.87	1,494.59	346	**1,090**	1,136
0207	MW205	09 Oct 2024	0207_MW205_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.13[#1]	<0.05[#1]	<0.13[#1]	<0.13[#1]	<0.05[#1]	<0.13[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	23.4	21.2	-	**13.7**	-
0207	MW207	10 Oct 2024	0207_MW207_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.72	2.55	-	**2.05**	-
0207	MW221	09 Oct 2024	0207_MW221_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.44	5.93	-	**3.99**	-
0207	MW229	09 Oct 2024	0207_MW229_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	64.6	64.6	-	**60.8**	-
0207	MW230	09 Oct 2024	0207_MW230_241009	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.04[#1]	<0.05	<0.05	1.17	0.14	33.9	32.2	-	**7.27**	-
0207	MW233	10 Oct 2024	0207_MW233_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.02	0.95	-	**0.75**	-
0207	MW235	10 Oct 2024	0207_MW235_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	38.1	33.5	-	**13.2**	-
0207	MW236	10 Oct 2024	0207_MW236_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.46[#1]	<0.05	28.4	26.1	-	**17.0**	-
0207	MW241	10 Oct 2024	0207_MW241_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.37	6.17	-	**5.84**	-
0207	MW245	08 Oct 2024	0207_MW245_241008	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.40	0.40	-	**0.30**	-
0207	MW249	10 Oct 2024	0207_MW249_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.45	8.28	-	**4.50**	-
0207	MW252	10 Oct 2024	0207_MW252_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	69.6	67.5	-	**60.6**	-
0207	MW257	09 Oct 2024	0207_MW257_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	0.23	-	**0.23**	-
0207	MW262	09 Oct 2024	0207_MW262_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	0.97	-	**0.74**	-

Appendix B
Table 2
Groundwater Analytical Results

									PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic				PFAS - Sums				
									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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
									µg/L	µg/L	µg/L	µg/L	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	0.02	0.05	0.05	0.02	0.05	0.02	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																								
PFAS NEMP 2.0 2020 Health Drinking Water																							**0.07**	
Site ID	**Location**	**Date**	**Field ID**	**Lab Report**	**Monitoring Round**	**Sample Type**																		
0207	MW269	09 Oct 2024	0207_MW269_241009	EB2432644	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.27	<0.05	0.34	0.34	-	**0.07**	-
0207	MW272	09 Oct 2024	0207_MW272_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	0.79	-	**0.58**	-
0207	MW276	09 Oct 2024	0207_MW276_241009	EB2432605	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.05	<0.05	20.2	19.0	-	**15.5**	-
0207	MW299	10 Oct 2024	0207_MW299_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.08	<0.05	43.7	40.4	-	**23.8**	-
0207	MW300	10 Oct 2024	0207_MW300_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.90[#1]	<0.09[#1]	96.6	89.4	-	**68.3**	-
0207	MW562	10 Oct 2024	0207_MW562_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	0.16	<0.09[#1]	43.3	38.8	-	**23.2**	-
0207	MW563	10 Oct 2024	0207_MW563_241010	EB2432583	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	0.79	-	**0.34**	-
0207	MW568	08 Oct 2024	0207_MW568_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.46	<0.05	0.60	0.60	-	<0.01	-
0207	MW569	10 Oct 2024	0207_MW569_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.11	1.94	-	**0.44**	-
0207	MW570	10 Oct 2024	0207_MW570_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	0.83	-	**0.69**	-
0207	MW570	10 Oct 2024	0207_MW570_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	0.82	-	**0.70**	-
0207	MW570	10 Oct 2024	0207_QC106_241010	EB2432603	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	1.01	-	**0.78**	-
0207	MW570	10 Oct 2024	0207_QC206_241010	1148785	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	1.85	1.64	0.48	**1.22**	1.26
0207	MW571	10 Oct 2024	0207_MW571_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.27	3.03	-	**2.28**	-
0207	MW571	10 Oct 2024	0207_MW571_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.08	6.50	-	**5.27**	-
0207	MW572	10 Oct 2024	0207_MW572_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.36	8.39	-	**5.57**	-
0207	MW572	10 Oct 2024	0207_MW572_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.62	8.82	-	**5.76**	-
0207	MW573	10 Oct 2024	0207_MW573_D_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.08	<0.05	9.68	8.89	-	**5.74**	-
0207	MW573	10 Oct 2024	0207_MW573_S_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	10.3	9.24	-	**6.36**	-
0207	MW574	08 Oct 2024	0207_MW574_D_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	0.77	-	**0.59**	-
0207	MW574	08 Oct 2024	0207_MW574_S_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.97	0.89	-	**0.59**	-
0207	MW575	10 Oct 2024	0207_MW575_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.95	6.35	-	**4.78**	-
0207	MW575	10 Oct 2024	0207_QC105_241010	EB2432603	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.18	6.52	-	**4.97**	-
0207	MW575	10 Oct 2024	0207_QC205_241010	1148785	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	7.19	6.48	2.54	**4.7**	4.84
0207	MW576	10 Oct 2024	0207_MW576_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	0.45	-	**0.40**	-
0207	MW577	10 Oct 2024	0207_MW577_241010	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.04[#1]	<0.04[#1]	-	<0.04[#1]	-
0207	MW578	08 Oct 2024	0207_MW578_241008	EB2432603	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.60	0.55	-	**0.44**	-

Comments
#1 Reported Analyte LOR is higher than Requested Analyte LOR
#2 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the
#3 The LORs have been raised due to matrix interference

Appendix B
Table 3
Historical Analytical Results

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																						
MW003	24 Oct 2019	0207_MW003_191024	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	24 Mar 2020	0207_MW003_200324	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	24 Mar 2020	0207_QC115_200324	OMP Apr 2020	Field_D	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	24 Mar 2020	0207_QC215_200324	OMP Apr 2020	Interlab_D	<0.01	<0.01	<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	<0.02	<0.02	<0.02	<0.01	<0.02
MW003	21 Oct 2020	0207_MW003_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	13 Apr 2021	0207_MW003_210413	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	14 Oct 2021	0207_MW003_211014	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	13 Apr 2022	0207_MW003_220413	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	02 Nov 2022	0207_MW003_221102	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	02 Nov 2022	0207_QC167_221102	OMP Oct 2022	Field_D	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	02 Nov 2022	0207_QC267_221102	OMP Oct 2022	Interlab_D	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	18 Apr 2023	0207_MW003_230418	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	25 Oct 2023	0207_MW003_231025	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	08 Apr 2024	0207_MW003_240408	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW003	09 Oct 2024	0207_MW003_241009	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW019	24 Oct 2019	0207_MW019_191024	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	26 Mar 2020	0207_MW019_200326	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	21 Oct 2020	0207_MW019_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	13 Apr 2021	0207_MW019_210413	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	14 Oct 2021	0207_MW019_211014	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	12 Apr 2022	0207_MW019_220412	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	27 Oct 2022	0207_MW019_221027	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	27 Oct 2022	0207_QC166_221027	OMP Oct 2022	Field_D	-	<0.02	<0.02	-	<0.02	*0.03*	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	27 Oct 2022	0207_QC266_221027	OMP Oct 2022	Interlab_D	-	<0.02	<0.02	-	<0.02	*0.03*	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	17 Apr 2023	0207_MW019_230417	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	**0.07**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	25 Oct 2023	0207_MW019_231025	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	*0.03*	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	09 Apr 2024	0207_MW019_240409	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW019	09 Oct 2024	0207_MW019_241009	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW038	24 Oct 2019	0207_MW038_191024	OMP Oct 2019	Normal	-	0.03	<0.02	-	<0.02	*0.28*	-	0.03	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW038	26 Mar 2020	0207_MW038_200326	OMP Apr 2020	Normal	-	0.04	<0.02	-	0.03	*0.59*	-	0.04	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW038	21 Oct 2020	0207_MW038_201021	OMP Oct 2020	Normal	-	0.03	<0.02	-	<0.02	*0.38*	-	0.03	-	**0.18**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW038	15 Apr 2021	0207_MW038_210415	OMP Apr 2021	Normal	-	0.04	<0.02	-	0.02	*0.50*	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW038	15 Oct 2021	0207_MW038_211015	OMP Oct 2021	Normal	-	0.05	<0.02	-	0.03	*0.62*	-	0.05	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW038	03 Nov 2022	0207_MW038_221103	OMP Oct 2022	Normal	-	0.06	<0.02	-	0.03	*0.62*	-	0.05	-	**0.31**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW038	13 Apr 2023	0207_MW038_230413	OMP Apr 2023	Normal	-	0.07	<0.02	-	0.03	*0.71*	-	0.06	-	**0.36**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW038	27 Oct 2023	0207_MW038_231027	OMP Oct 2023	Normal	-	0.06	<0.02	-	0.03	*0.84*	-	0.05	-	**0.40**	<0.1	<0.02	<0.02	0.02	0.07	<0.02	0.06	<0.02	<0.05	<0.02	<0.02	-
MW038	08 Apr 2024	0207_MW038_240408	OMP Apr 2024	Normal	-	0.04	<0.02	-	<0.02	*0.58*	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW038	01 Oct 2024	0207_MW038_241001	0207_PFASOMP_OCT_24	Normal	-	0.05	<0.02	<0.02	0.02	*0.70*	<0.02	0.05	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05
MW038	01 Oct 2024	0207_QC101_241001	0207_PFASOMP_OCT_24	Field_D	-	0.05	<0.02	<0.02	0.02	*0.66*	<0.02	0.05	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05
MW038	01 Oct 2024	0207_QC201_241001	0207_PFASOMP_OCT_24	Field_D	-	0.06	<0.02	<0.02	0.03	*0.71*	<0.02	0.05	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05
MW056	23 Oct 2020	0207_MW056_201023	OMP Oct 2020	Normal	-	0.03	<0.02	-	<0.02	*0.06*	-	0.03	-	**0.25**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.01	0.02	<0.05	<0.02	<0.02	-
MW056	13 Apr 2021	0207_MW056_210413	OMP Apr 2021	Normal	-	0.05	<0.02	-	<0.02	*0.12*	-	0.04	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW056	14 Oct 2021	0207_MW056_211014	OMP Oct 2021	Normal	-	0.05	<0.02	-	<0.02	*0.11*	-	0.03	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW056	12 Apr 2022	0207_MW056_220412	OMP Apr 2022	Normal	-	0.07	<0.02	-	<0.02	*0.07*	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW056	27 Oct 2022	0207_MW056_221027	OMP Oct 2022	Normal	-	0.05	<0.02	-	<0.02	*0.09*	-	0.04	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	0.03	<0.05	<0.02	<0.02	-
MW056	17 Apr 2023	0207_MW056_230417	OMP Apr 2023	Normal	-	0.04	<0.02	-	<0.02	*0.11*	-	0.04	-	**0.29**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	0.03	<0.05	<0.02	<0.02	-

Appendix B
Table 3
Historical Analytical Results

						PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids									
						FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems											*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water											**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																							
MW056	25 Oct 2023	0207_MW056_231025	OMP Oct 2023	Normal	-	0.04	<0.02	-	<0.02	***0.10***	-	0.02	-	**0.25**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW056	09 Apr 2024	0207_MW056_240409	OMP Apr 2024	Normal	-	0.03	<0.02	-	<0.02	***0.07***	-	<0.02	-	**0.16**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	24 Oct 2019	0207_MW134_191024	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	26 Mar 2020	0207_MW134_200326	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	21 Oct 2020	0207_MW134_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	19 Apr 2021	0207_MW134_210419	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	14 Oct 2021	0207_MW134_211014	OMP Oct 2021	Normal	-	0.02	<0.02	-	<0.02	***0.14***	-	0.02	-	**0.13**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	14 Apr 2022	0207_MW134_220414	OMP Apr 2022	Normal	-	0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	02 Nov 2022	0207_MW134_221102	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	19 Apr 2023	0207_MW134_230419	OMP Apr 2023	Normal	-	0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	25 Oct 2023	0207_MW134_231025	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	***0.18***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	10 Apr 2024	0207_MW134_240410	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW134	09 Oct 2024	0207_MW134_241009	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW147	24 Oct 2019	0207_MW147_191024	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	27 Mar 2020	0207_MW147_200327	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	21 Oct 2020	0207_MW147_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	13 Apr 2021	0207_MW147_210413	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	14 Oct 2021	0207_MW147_211014	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	0.03	<0.02	<0.02	0.01	0.03	<0.05	<0.02	<0.02	-
MW147	12 Apr 2022	0207_MW147_220412	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	17 Apr 2023	0207_MW147_230417	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	25 Oct 2023	0207_MW147_231025	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	09 Apr 2024	0207_MW147_240409	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW147	11 Oct 2024	0207_MW147_241011	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW151	24 Oct 2019	0207_MW151_191024	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	27 Mar 2020	0207_MW151_200327	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	21 Oct 2020	0207_MW151_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	13 Apr 2021	0207_MW151_210413	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	14 Oct 2021	0207_MW151_211014	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	14 Apr 2022	0207_MW151_220414	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	17 Apr 2023	0207_MW151_230417	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	25 Oct 2023	0207_MW151_231025	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	09 Apr 2024	0207_MW151_240409	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW151	11 Oct 2024	0207_MW151_241011	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	*0.03*	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW167	21 Oct 2019	0207_MW167_191021	OMP Oct 2019	Normal	-	0.76	<0.02	-	0.31	***6.86***	-	0.69	-	**3.67**	0.2	<0.02	<0.02	0.25	1.54	<0.02	0.43	0.32	<0.05	<0.02	<0.02	-
MW167	30 Oct 2019	0207_MWA1-B_191030	OMP Oct 2019	Normal	-	0.857	0.0295	-	0.440	***9.06***	-	0.614	-	**3.61**	0.138	0.0007	<0.0005	0.209	1.57	0.0035	0.473	0.322	<0.0005	<0.0005	<0.0005	-
MW167	25 Mar 2020	0207_MW167_200325	OMP Apr 2020	Normal	-	1.05	<0.09[#1]	-	0.48	***9.18***	-	0.80	-	**4.34**	<0.4[#1]	<0.09[#1]	<0.09[#1]	0.24	1.36	<0.09[#1]	0.46	0.29	<0.23[#1]	<0.09[#1]	<0.09[#1]	-
MW167	19 Oct 2020	0207_MW167_201019	OMP Oct 2020	Normal	-	0.85	<0.02	-	0.38	***8.45***	-	0.70	-	**3.68**	0.28	<0.02	<0.02	0.28	1.74	<0.02	0.52	0.40	<0.05	<0.02	<0.02	-
MW167	23 Mar 2021	0207_MWA1-B_210323	OMP Apr 2021	Normal	-	0.88	<0.10[#1]	-	0.42	***11.2***	-	0.71	-	**4.32**	<0.5[#1]	<0.10[#1]	<0.10[#1]	0.34	1.73	<0.10[#1]	**0.59**	0.46	<0.24[#1]	<0.10[#1]	<0.10[#1]	-
MW167	17 Apr 2021	0207_MW167_210417	OMP Apr 2021	Normal	-	0.62	<0.02	-	0.26	***5.50***	-	0.54	-	**2.73**	0.22	<0.02	<0.02	0.22	1.22	<0.02	0.36	0.29	<0.05	<0.02	<0.02	-
MW167	11 Oct 2021	0207_MW167_211011	OMP Oct 2021	Normal	-	0.70	<0.05[#1]	-	0.29	***5.01***	-	0.63	-	**3.03**	0.3	<0.05[#1]	<0.05[#1]	0.24	1.43	<0.05[#1]	0.43	0.30	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW167	17 Apr 2022	0207_MW167_220417	OMP Apr 2022	Normal	-	0.55	<0.02	-	0.22	***4.34***	-	0.46	-	**2.48**	0.1	<0.02	<0.02	0.17	1.18	<0.02	0.36	0.26	<0.06[#1]	<0.02	<0.02	-
MW167	27 Oct 2022	0207_MW167_221027	OMP Oct 2022	Normal	-	0.46	<0.02	-	0.20	***5.85***	-	0.42	-	**2.32**	0.1	<0.02	<0.02	0.15	0.98	<0.02	0.28	0.22	<0.05	<0.02	<0.02	-
MW167	12 Apr 2023	0207_MW167_230412	OMP Apr 2023	Normal	-	0.77	<0.02	-	0.39	***5.47***	-	0.68	-	**3.15**	0.2	<0.02	<0.02	0.23	1.38	<0.02	0.46	0.32	<0.05	<0.02	<0.02	-

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**					
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																						
MW167	12 Apr 2023	0207_QC103_230412	OMP Apr 2023	Field_D	-	0.85	<0.02	-	0.40	***6.01***	-	0.79	-	**3.64**	0.3	<0.02	<0.02	0.26	1.44	<0.02	0.46	0.35	<0.06[#1]	<0.02	<0.02	-
MW167	12 Apr 2023	0207_QC203_230412	OMP Apr 2023	Interlab_D	<0.01	0.57	<0.01	-	0.2	***3.2***	-	0.52	<0.01	**2.2**	0.21	<0.01	<0.01	0.16	0.99	<0.01	0.31	0.24	<0.02	<0.02	<0.01	<0.02
MW167	24 Oct 2023	0207_MW167_231024	OMP Oct 2023	Normal	-	0.74	<0.02	-	0.29	***4.76***	-	0.60	-	**3.21**	0.2	<0.02	<0.02	0.18	0.99	<0.02	0.41	0.33	<0.05	<0.02	<0.02	-
MW167	09 Oct 2024	0207_MW167_241009	0207_PFASOMP_OCT_24	Normal	-	0.54	<0.02	-	0.26	***4.86***	-	0.54	-	**2.51**	0.2	<0.02	<0.02	0.17	1.21	<0.02	0.34	0.33	<0.05	<0.02	<0.02	<0.05
MW172	23 Oct 2019	0207_MW172_191023	OMP Oct 2019	Normal	-	0.42	<0.02	-	0.16	***5.34***	-	0.40	-	**2.18**	0.5	0.08	<0.02	1.10	1.60	0.15	**0.84**	1.47	<0.05	<0.02	<0.02	-
MW172	20 Oct 2020	0207_MW172_201020	OMP Oct 2020	Normal	-	0.33	<0.02	-	0.15	***3.96***	-	0.34	-	**2.05**	0.5	0.07	<0.02	1.09	1.36	0.14	**0.64**	1.47	<0.05	<0.02	<0.02	-
MW172	14 Apr 2021	0207_MW172_210414	OMP Apr 2021	Normal	-	0.30	<0.02	-	0.09	***3.63***	-	0.30	-	**1.71**	0.6	0.08	<0.02	1.42	1.18	0.14	**0.59**	1.83	<0.05	<0.02	<0.02	-
MW172	14 Apr 2021	0207_QC145_210414	OMP Apr 2021	Field_D	-	0.45	<0.02	-	0.10	***2.79***	-	0.33	-	**1.77**	0.56	0.07	<0.02	1.54	1.37	0.13	**0.72**	2.02	<0.05	<0.02	<0.02	-
MW172	14 Apr 2021	0207_QC245_210414	OMP Apr 2021	Interlab_D	0.017	0.32	<0.01	-	0.076	***2.6***	-	0.27	<0.01	**1.6**	0.54	0.046	<0.01	1.3	1.1	0.12	**0.56**	1.6	<0.02	<0.02	<0.01	<0.02
MW172	13 Oct 2021	0207_MW172_211013	OMP Oct 2021	Normal	-	0.22	<0.02	-	0.09	***2.50***	-	0.23	-	**1.20**	0.4	0.04	<0.02	0.66	0.79	0.08	0.36	1.06	<0.05	<0.02	<0.02	-
MW172	17 Apr 2022	0207_MW172_220417	OMP Apr 2022	Normal	-	1.03	<0.05[#1]	-	0.56	***22.1***	-	0.91	-	**4.61**	0.9	0.08	<0.05[#1]	1.70	3.99	0.13	**1.88**	2.34	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW172	26 Oct 2022	0207_MW172_221026	OMP Oct 2022	Normal	-	1.15	<0.10[#1]	-	0.60	***18.4***	-	1.02	-	**5.72**	1.3	<0.10[#1]	<0.10[#1]	2.03	4.28	0.16	**1.80**	3.61	<0.25[#1]	<0.10[#1]	<0.10[#1]	-
MW172	26 Oct 2022	0207_QC165_221026	OMP Oct 2022	Field_D	-	1.01	<0.02	-	0.45	***17.2***	-	0.85	-	**4.41**	1.0	0.08	<0.02	1.93	3.76	0.17	**1.81**	3.33	<0.06[#1]	<0.02	<0.02	-
MW172	26 Oct 2022	0207_QC265_221026	OMP Oct 2022	Interlab_D	-	0.92	0.06	-	0.50	***17.2***	-	0.98	-	**4.90**	1.0	0.11	<0.02	1.69	3.21	0.19	**1.74**	3.37	<0.05	<0.02	0.03	-
MW172	12 Apr 2023	0207_MW172_230412	OMP Apr 2023	Normal	-	1.13	<0.02	-	0.44	***13.4***	-	0.89	-	**4.45**	1.1	0.07	<0.02	1.72	3.07	0.16	**1.41**	4.06	<0.06[#1]	<0.02	<0.02	-
MW172	24 Oct 2023	0207_MW172_231024	OMP Oct 2023	Normal	-	0.94	<0.02	-	0.39	***14.0***	-	0.87	-	**4.55**	1.2	0.08	<0.02	1.33	2.20	0.13	**1.25**	5.53	<0.05	<0.02	<0.02	-
MW172	10 Oct 2024	0207_MW172_241010	0207_PFASOMP_OCT_24	Normal	-	0.56	<0.05[#1]	-	0.20	***5.56***	-	0.57	-	**3.07**	1.0	<0.05[#1]	<0.05[#1]	0.86	1.85	0.07	**0.66**	4.79	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
MW173	23 Oct 2019	0207_MW173_191023	OMP Oct 2019	Normal	-	0.39	<0.02	-	0.23	***2.98***	-	0.41	-	**4.05**	0.4	0.03	<0.02	0.83	1.74	0.20	**0.84**	1.46	<0.05	<0.02	<0.02	-
MW173	26 Mar 2020	0207_MW173_200326	OMP Apr 2020	Normal	-	0.32	<0.03[#1]	-	0.21	***2.88***	-	0.39	-	**3.04**	0.2	<0.03[#1]	<0.03[#1]	0.66	1.44	0.14	**0.70**	1.18	<0.08[#1]	<0.03[#1]	<0.03[#1]	-
MW173	26 Mar 2020	0207_QC121_200326	OMP Apr 2020	Field_D	-	0.35	<0.03[#1]	-	0.21	***2.97***	-	0.43	-	**3.20**	0.2	<0.03[#1]	<0.03[#1]	0.72	1.50	0.14	**0.70**	1.24	<0.08[#1]	<0.03[#1]	<0.03[#1]	-
MW173	26 Mar 2020	0207_QC221_200326	OMP Apr 2020	Interlab_D	<0.01	0.35	<0.01	-	0.16	***2.3***	-	0.32	<0.01	**2.6**	0.43	<0.01	<0.01	0.71	1.5	0.17	**0.73**	1.3	<0.02	<0.02	<0.01	<0.02
MW173	20 Oct 2020	0207_MW173_201020	OMP Oct 2020	Normal	-	0.29	<0.02	-	0.18	***2.27***	-	0.29	-	**2.67**	0.3	<0.02	<0.02	0.58	1.28	0.12	**0.56**	0.97	<0.05	<0.02	<0.02	-
MW173	20 Oct 2020	0207_QC132_201020	OMP Oct 2020	Field_D	-	0.32	<0.02	-	0.17	***1.85***	-	0.31	-	**2.90**	<0.35[#1]	<0.02	<0.02	0.61	1.22	0.12	**0.57**	<0.98[#1]	<0.05	<0.02	<0.02	-
MW173	20 Oct 2020	0207_QC232_201020	OMP Oct 2020	Interlab_D	<0.01	0.23	<0.01	-	0.1	***1.6***	-	0.21	<0.01	**2.3**	0.31	0.012	<0.01	0.54	0.96	0.099	0.51	0.99	<0.02	<0.02	<0.01	<0.02
MW173	14 Apr 2021	0207_MW173_210414	OMP Apr 2021	Normal	-	0.22	<0.02	-	0.14	***2.01***	-	0.25	-	**2.32**	0.3	<0.02	<0.02	0.50	0.93	0.11	0.46	0.96	<0.05	<0.02	<0.02	-
MW173	13 Oct 2021	0207_MW173_211013	OMP Oct 2021	Normal	-	0.27	<0.02	-	0.21	***2.46***	-	0.28	-	**2.54**	0.3	0.02	<0.02	0.63	1.18	0.14	**0.60**	1.10	<0.05	<0.02	<0.02	-
MW173	17 Apr 2022	0207_MW173_220417	OMP Apr 2022	Normal	-	0.24	<0.02	-	0.15	***2.90***	-	0.25	-	**2.37**	0.3	<0.02	<0.02	0.47	1.05	0.14	**0.56**	0.93	<0.06[#1]	<0.02	<0.02	-
MW173	24 Oct 2022	0207_MW173_221024	OMP Oct 2022	Normal	-	0.30	<0.02	-	0.20	***2.34***	-	0.35	-	**2.42**	0.4	<0.02	<0.02	0.55	1.47	0.12	0.49	1.07	<0.05	<0.02	<0.02	-
MW173	12 Apr 2023	0207_MW173_230412	OMP Apr 2023	Normal	-	0.39	<0.02	-	0.19	***2.31***	-	0.38	-	**2.49**	0.4	0.02	<0.02	0.61	1.52	0.12	0.51	1.19	<0.05	<0.02	<0.02	-
MW173	24 Oct 2023	0207_MW173_231024	OMP Oct 2023	Normal	-	0.49	<0.02	-	0.14	***1.80***	-	0.36	-	**2.71**	0.4	<0.02	<0.02	0.59	1.28	0.12	**0.59**	1.32	<0.05	<0.02	<0.02	-
MW173	24 Oct 2023	0207_QC100_231024	OMP Oct 2023	Field_D	-	0.41	<0.02	-	0.16	***1.94***	-	0.40	-	**2.94**	0.4	<0.02	<0.02	0.59	1.17	0.11	**0.59**	1.34	<0.05	<0.02	<0.02	-
MW173	24 Oct 2023	0207_QC200_231024	OMP Oct 2023	Interlab_D	<0.01	0.39	<0.01	-	0.094	***2.1***	-	0.3	<0.01	**1.8**	0.43	0.01	<0.01	0.61	1.3	0.11	0.51	1.4	<0.02	<0.02	<0.01	<0.02
MW173	10 Oct 2024	0207_MW173_241010	0207_PFASOMP_OCT_24	Normal	-	0.46	<0.02	-	0.26	***4.16***	-	0.56	-	**3.88**	0.6	0.04	<0.02	0.96	2.31	0.18	**0.83**	2.21	<0.05	<0.02	<0.02	<0.05
MW173	10 Oct 2024	0207_QC104_241010	0207_PFASOMP_OCT_24	Field_D	-	0.42	<0.02	-	0.17	***2.88***	-	0.40	-	**2.72**	0.4	0.03	<0.02	0.77	1.76	0.14	**0.59**	1.39	<0.05	<0.02	<0.02	<0.05
MW173	10 Oct 2024	0207_QC204_241010	0207_PFASOMP_OCT_24	Interlab_D	-	0.40	<0.01	<0.01	0.14[#2]	***2.7***[#2]	0.17	0.40[#2]	-	**3.2**[#2]	0.48	0.02	<0.01	0.68[#2]	2.0	0.11[#2]	**0.56**[#2]	1.5	<0.01	<0.01	<0.01	-
MW174	22 Oct 2019	0207_MW174_191022	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	22 Oct 2019	0207_QC100_191022	OMP Oct 2019	Field_D	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	22 Oct 2019	0207_QC200_191022	OMP Oct 2019	Interlab_D	<0.01	<0.01	<0.01	-	<0.01	*<0.02*	-	<0.01	<0.01	0.012	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW174	29 Oct 2019	0207_MWA4-A_191029	OMP Oct 2019	Normal	-	0.0406	<0.0005	-	0.0040	*0.0612*	-	0.0273	-	**0.0838**	0.015	0.0013	<0.0005	0.0381	0.149	0.0015	0.0110	0.184	<0.0005	<0.0005	<0.0005	-
MW174	26 Mar 2020	0207_MW174_200326	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	0.05	<0.05	<0.02	<0.02	-
MW174	19 Oct 2020	0207_MW174_201020	OMP Oct 2020	Normal	-	<0.60[#1]	<0.02	-	<0.02	***0.09***	-	0.02	-	**0.09**	<0.20[#1]	<0.02	<0.02	0.06	0.09	<0.02	<0.01	0.16	<0.05	<0.02	<0.02	-
MW174	14 Apr 2021	0207_MW174_210414	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	0.06	<0.2[#1]	<0.02	<0.02	0.05	<0.11[#1]	<0.02	<0.01	0.17	<0.05	<0.02	<0.02	-
MW174	13 Oct 2021	0207_MW174_211013	OMP Oct 2021	Normal	-	<1.43[#1]	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	0.09	0.16	<0.02	0.01	0.40	<0.05	<0.02	<0.02	-
MW174	17 Apr 2022	0207_MW174_220417	OMP Apr 2022	Normal	-	<0.04[#1]	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.03	<0.05	<0.02	<0.02	-

		PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
		FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR		0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems							*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water							**0.07**				**0.07**							**0.56**					
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW174	02 Nov 2022	0207_MW174_221102	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	0.03	0.04	<0.02	<0.01	0.09	<0.05	<0.02	<0.02	-
MW174	13 Apr 2023	0207_MW174_230413	OMP Apr 2023	Normal	-	0.03	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.04	<0.05	<0.02	<0.02	-
MW174	24 Oct 2023	0207_MW174_231024	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.04	<0.05	<0.02	<0.02	-
MW174	03 Apr 2024	0207_MW174_240403	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	03 Apr 2024	0207_QC101_240403	OMP Apr 2024	Field_D	-	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW174	03 Apr 2024	0207_QC201_240403	OMP Apr 2024	Interlab_D	<0.01	<0.01	<0.01	-	<0.01	*<0.02*	-	<0.01	<0.01	0.016	<0.05	<0.01	<0.01	0.027	0.039	<0.01	<0.01	0.1	<0.02	<0.02	<0.01	<0.02
MW174	09 Oct 2024	0207_MW174_241009	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	***0.04***	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW178	23 Oct 2019	0207_MW178_191023	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	29 Oct 2019	0207_MWA4-B-UA_191029	OMP Oct 2019	Normal	-	<0.0005	<0.0005	-	0.0007	***0.0040***	-	0.0007	-	0.0054	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-
MW178	26 Mar 2020	0207_MW178_200326	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	19 Oct 2020	0207_MW178_201019	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	19 Oct 2020	0207_QC131_201019	OMP Oct 2020	Field_D	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	24 Mar 2021	0207_MWA4-B-UA_210324	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	24 Mar 2021	0207_QC102_210324	OMP Apr 2021	Field_D	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	24 Mar 2021	0207_QC202_210324	OMP Apr 2021	Interlab_D	-	<0.01	<0.01	-	<0.01	*<0.02*	<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	-
MW178	17 Apr 2021	0207_MW178_210417	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	11 Oct 2021	0207_MW178_211011	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	17 Apr 2022	0207_MW178_220417	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	02 Nov 2022	0207_MW178_221102	OMP Oct 2022	Normal	-	<0.04[#1]	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	13 Apr 2023	0207_MW178_230413	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	24 Oct 2023	0207_MW178_231024	OMP Oct 2023	Normal	-	<0.04[#1]	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	03 Apr 2024	0207_MW178_240403	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW178	09 Oct 2024	0207_MW178_241009	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW178	09 Oct 2024	0207_QC103_241009	0207_PFASOMP_OCT_24	Field_D	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW178	09 Oct 2024	0207_QC203_241009	0207_PFASOMP_OCT_24	Interlab_D	-	<0.01	<0.01	<0.01	<0.01	*<0.01*	<0.01	<0.01	-	0.01[#2]	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
MW179	06 Nov 2019	0207_MW179_191106	OMP Oct 2019	Normal	-	0.46	<0.02	-	0.17	***1.78***	-	0.41	-	**2.08**	<0.1	<0.02	<0.02	0.20	1.06	<0.02	0.27	0.22	<0.05	<0.02	<0.02	-
MW179	23 Mar 2020	0207_MW179_200323	OMP Apr 2020	Normal	-	0.60	<0.02	-	0.21	***2.79***	-	0.48	-	**2.49**	0.2	<0.02	<0.02	0.26	1.40	<0.02	0.33	0.27	<0.05	<0.02	<0.02	-
MW179	23 Mar 2020	0207_QC114_200323	OMP Apr 2020	Field_D	-	0.38	<0.02	-	0.18	***2.03***	-	0.35	-	**1.96**	0.2	<0.02	<0.02	0.17	1.13	<0.02	0.28	0.19	<0.05	<0.02	<0.02	-
MW179	23 Mar 2020	0207_QC214_200323	OMP Apr 2020	Interlab_D	<0.01	0.49	<0.01	-	0.13	***1.9***	-	0.38	<0.01	**2.0**	0.23	<0.01	<0.01	0.19	1.0	<0.01	0.27	0.25	<0.02	<0.02	<0.01	<0.02
MW179	20 Oct 2020	0207_MW179_201020	OMP Oct 2020	Normal	-	0.52	<0.02	-	0.23	***3.01***	-	0.43	-	**2.30**	0.2	<0.02	<0.02	0.23	1.47	<0.02	0.35	0.29	<0.05	<0.02	<0.02	-
MW179	16 Apr 2021	0207_MW179_210416	OMP Apr 2021	Normal	-	0.57	<0.02	-	0.26	***3.05***	-	0.51	-	**2.60**	0.33	<0.02	<0.02	0.25	1.34	<0.02	0.35	0.30	<0.05	<0.02	<0.02	-
MW179	16 Apr 2021	0207_QC150_210416	OMP Apr 2021	Field_D	-	0.58	<0.02	-	0.25	***3.21***	-	0.52	-	**2.67**	0.23	<0.02	<0.02	0.27	1.44	<0.02	0.40	0.32	<0.05	<0.02	<0.02	-
MW179	16 Apr 2021	0207_QC250_210416	OMP Apr 2021	Interlab_D	<0.01	0.53	<0.01	-	0.16	***2.7***	-	0.42	<0.01	**2.4**	0.22	<0.01	<0.01	0.19	1.3	<0.01	0.28	0.25	<0.02	<0.02	<0.01	<0.02
MW179	11 Oct 2021	0207_MW179_211011	OMP Oct 2021	Normal	-	0.62	<0.02	-	0.31	***3.89***	-	0.56	-	**2.76**	0.2	<0.02	<0.02	0.26	1.70	<0.02	0.43	0.28	<0.05	<0.02	<0.02	-
MW179	18 Apr 2022	0207_MW179_220418	OMP Apr 2022	Normal	-	0.54	<0.02	-	0.20	***2.33***	-	0.46	-	**2.39**	0.2	<0.02	<0.02	0.23	1.37	<0.02	0.41	0.27	<0.06[#1]	<0.02	<0.02	-
MW179	03 Nov 2022	0207_MW179_221103	OMP Oct 2022	Normal	-	0.94	<0.02	-	0.30	***4.19***	-	0.53	-	**2.76**	0.2	<0.02	<0.02	0.32	1.82	<0.02	**0.62**	0.36	<0.05	<0.02	<0.02	-
MW179	13 Apr 2023	0207_MW179_230413	OMP Apr 2023	Normal	-	0.73	<0.02	-	0.27	***2.59***	-	0.55	-	**2.66**	0.3	<0.02	<0.02	0.30	1.58	<0.02	0.54	0.31	<0.05	<0.02	<0.02	-
MW179	24 Oct 2023	0207_MW179_231024	OMP Oct 2023	Normal	-	0.62	<0.02	-	0.23	***3.65***	-	0.48	-	**2.60**	0.2	<0.02	<0.02	0.24	1.24	<0.02	0.47	0.33	<0.05	<0.02	<0.02	-
MW179	03 Apr 2024	0207_MW179_240403	OMP Apr 2024	Normal	-	0.42	<0.02	-	0.17	***2.63***	-	0.33	-	**1.88**	0.2	<0.02	<0.02	0.19	1.03	<0.02	0.31	0.22	<0.05	<0.02	<0.02	-
MW179	09 Oct 2024	0207_MW179_241009	0207_PFASOMP_OCT_24	Normal	-	0.48	<0.02	-	0.24	***3.45***	-	0.43	-	**2.13**	0.2	<0.02	<0.02	0.20	1.33	<0.02	0.34	0.30	<0.05	<0.02	<0.02	<0.05
MW187	22 Oct 2019	0207_MW187_191022	OMP Oct 2019	Normal	-	0.06	<0.02	-	0.02	***0.31***	-	0.09	-	**0.71**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW187	29 Oct 2019	0207_MWB5-A_191029	OMP Oct 2019	Normal	-	0.0908	<0.0005	-	0.0394	***0.339***	-	0.103	-	**0.603**	0.009	<0.0005	<0.0005	0.0159	0.167	0.0008	0.0320	0.0311	<0.0005	<0.0005	<0.0005	-
MW187	25 Mar 2020	0207_MW187_200325	OMP Apr 2020	Normal	-	<0.09[#1]	<0.09[#1]	-	<0.09[#1]	***0.38***	-	0.09	-	**0.73**	<0.5[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	0.11	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.23[#1]	<0.09[#1]	<0.09[#1]	-
MW187	25 Mar 2020	0207_QC216_200325	OMP Apr 2020	Interlab_D	<0.01	0.060	<0.01	-	0.018	***0.31***	-	0.074	<0.01	**0.66**	<0.05	<0.01	<0.01	0.013	0.11	<0.01	0.024	0.023	<0.02	<0.02	<0.01	<0.02
MW187	20 Oct 2020	0207_MW187_201020	OMP Oct 2020	Normal	-	0.06	<0.02	-	0.03	***0.34***	-	0.08	-	**0.60**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.03	0.02	<0.05	<0.02	<0.02	-

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																					
MW187	17 Apr 2021	0207_MW187_210417	OMP Apr 2021	Normal	-	0.09	<0.02	-	0.03	***0.31***	-	0.08	-	**0.58**	<0.10	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW187	13 Oct 2021	0207_MW187_211013	OMP Oct 2021	Normal	-	<0.06[#1]	<0.05[#1]	-	<0.05[#1]	***0.37***	-	0.07	-	**0.67**	<0.2[#1]	<0.05[#1]	<0.05[#1]	<0.05[#1]	0.12	<0.05[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW187	11 Apr 2022	0207_MW187_220411	OMP Apr 2022	Normal	-	0.03	<0.02	-	<0.02	***0.45***	-	0.02	-	**0.16**	0.1	<0.02	<0.02	<0.02	0.24	<0.02	<0.01	0.13	<0.05	<0.02	<0.02	-
MW187	27 Oct 2022	0207_MW187_221027	OMP Oct 2022	Normal	-	0.05	<0.02	-	<0.02	***0.32***	-	0.06	-	**0.41**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.05	<0.05	<0.02	<0.02	-
MW187	13 Apr 2023	0207_MW187_230413	OMP Apr 2023	Normal	-	0.06	<0.02	-	0.02	***0.37***	-	0.07	-	**0.50**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW187	26 Oct 2023	0207_MW187_231026	OMP Oct 2023	Normal	-	<0.04[#1]	<0.02	-	<0.02	***0.22***	-	0.06	-	**0.46**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW187	03 Apr 2024	0207_MW187_240403	OMP Apr 2024	Normal	-	0.03	<0.02	-	<0.02	***0.18***	-	0.04	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	22 Oct 2019	0207_MW189_191022	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	*0.06*	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	29 Oct 2019	0207_MWB5-B_191029	OMP Oct 2019	Normal	-	0.0128	<0.0005	-	0.0044	***0.0997***	-	0.0141	-	**0.0957**	0.002	<0.0005	<0.0005	0.0020	0.0180	<0.0005	0.0042	0.0039	<0.0005	<0.0005	<0.0005	-
MW189	25 Mar 2020	0207_MW189_200325	OMP Apr 2020	Normal	-	<0.03[#1]	<0.03[#1]	-	<0.03[#1]	***0.08***	-	<0.03[#1]	-	**0.08**	<0.2[#1]	<0.03[#1]	<0.03[#1]	<0.03[#1]	<0.03[#1]	<0.03[#1]	<0.03[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.03[#1]	-
MW189	20 Oct 2020	0207_MW189_201020	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	***0.12***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	17 Apr 2021	0207_MW189_210417	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	***0.12***	-	<0.02	-	**0.08**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	13 Oct 2021	0207_MW189_211013	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	***0.09***	-	<0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	11 Apr 2022	0207_MW189_220411	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.07**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	27 Oct 2022	0207_MW189_221027	OMP Oct 2022	Normal	-	0.02	<0.02	-	<0.02	*0.06*	-	<0.02	-	**0.07**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
MW189	13 Apr 2023	0207_MW189_230413	OMP Apr 2023	Normal	-	0.02	<0.02	-	<0.02	***0.10***	-	0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	13 Apr 2023	0207_QC106_230413	OMP Apr 2023	Field_D	-	0.02	<0.02	-	<0.02	***0.10***	-	0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	13 Apr 2023	0207_QC206_230413	OMP Apr 2023	Interlab_D	<0.01	0.012	<0.01	-	<0.01	***0.078***	-	0.017	<0.01	**0.12**	<0.05	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW189	26 Oct 2023	0207_MW189_231026	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	***0.08***	-	0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	03 Apr 2024	0207_MW189_240403	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	***0.05***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW189	09 Oct 2024	0207_MW189_241009	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	***0.09***	-	0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW193	23 Oct 2019	0207_MW193_191023	OMP Oct 2019	Normal	-	3.48	<0.02	-	1.49	***21.8***	-	3.94	-	**21.3**	2.4	<0.02	<0.02	2.68	11.7	0.04	**4.05**	2.55	<0.05	<0.02	<0.02	-
MW193	30 Oct 2019	0207_MWC1-C_191030	OMP Oct 2019	Normal	-	4.28	<0.0100[#1]	-	2.43	***21.4***	-	4.64	-	**18.4**	1.02	<0.0100[#1]	<0.0100[#1]	2.52	9.83	0.0480	**5.06**	3.08	<0.0250[#1]	<0.0100[#1]	<0.0100[#1]	-
MW193	30 Oct 2019	0207_MWC1-H_191030	OMP Oct 2019	Normal	-	1.28	<0.0100[#1]	-	1.57	***33.1***	-	1.50	-	**9.84**	0.963	<0.0100[#1]	<0.0100[#1]	0.987	4.18	0.0290	**2.02**	1.76	<0.0250[#1]	<0.0100[#1]	<0.0100[#1]	-
MW193	25 Mar 2020	0207_MW193_200325	OMP Apr 2020	Normal	-	3.93	<0.16[#1]	-	1.96	***24.1***	-	3.88	-	**20.4**	1.4	<0.16[#1]	<0.16[#1]	2.74	9.98	<0.16[#1]	**3.95**	2.46	<0.40[#1]	<0.16[#1]	<0.16[#1]	-
MW193	20 Oct 2020	0207_MW193_201020	OMP Oct 2020	Normal	-	3.20	<0.07[#1]	-	1.68	***17.3***	-	3.48	-	**17.1**	3.9	<0.07[#1]	<0.07[#1]	2.42	9.39	<0.07[#1]	**3.54**	2.31	<0.18[#1]	<0.07[#1]	<0.07[#1]	-
MW193	20 Oct 2020	0207_QC134_201020	OMP Oct 2020	Field_D	-	3.36	<0.04[#1]	-	1.85	***21.5***	-	3.64	-	**17.3**	1.9	<0.04[#1]	<0.04[#1]	2.46	9.80	0.05	**3.74**	2.30	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW193	20 Oct 2020	0207_QC234_201020	OMP Oct 2020	Interlab_D	<0.01	3	<0.01	-	1.1	***17***	-	2.6	<0.01	**14**	3	<0.01	<0.01	1.8	6.8	0.038	**2.7**	1.9	<0.02	<0.02	<0.01	<0.02
MW193	24 Mar 2021	0207_MWC1-C_210224	OMP Apr 2021	Normal	-	3.48	<0.02	-	1.85	***18.0***	-	3.85	-	**16.3**	3.7	<0.02	<0.02	2.63	9.11	0.05	**3.80**	2.60	<0.05	<0.02	<0.02	-
MW193	14 Apr 2021	0207_MW193_210414	OMP Apr 2021	Normal	-	3.91	<0.04[#1]	-	1.84	***25.9***	-	4.23	-	**17.0**	4.1	<0.04[#1]	<0.04[#1]	2.52	9.92	0.04	**3.80**	2.62	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW193	11 Oct 2021	0207_MW193_211011	OMP Oct 2021	Normal	-	4.26	<0.02	-	2.28	***24.7***	-	4.47	-	**20.7**	4.2	<0.02	<0.02	2.75	11.3	0.05	**4.16**	2.47	<0.06[#1]	<0.02	<0.02	-
MW193	17 Apr 2022	0207_MW193_220417	OMP Apr 2022	Normal	-	2.94	<0.02	-	1.35	***16.7***	-	2.77	-	**14.8**	6.0	<0.02	<0.02	1.87	8.13	<0.02	**2.91**	1.92	<0.06[#1]	<0.02	<0.02	-
MW193	26 Oct 2022	0207_MW193_221026	OMP Oct 2022	Normal	-	2.21	<0.02	-	0.92	***12.8***	-	2.11	-	**11.5**	4.8	<0.02	<0.02	1.52	6.18	<0.02	**2.20**	1.40	<0.06[#1]	<0.02	<0.02	-
MW193	12 Apr 2023	0207_MW193_230412	OMP Apr 2023	Normal	-	2.62	<0.05[#1]	-	1.08	***11.2***	-	2.64	-	**12.9**	4.1	<0.05[#1]	<0.05[#1]	1.41	5.88	<0.05[#1]	**2.20**	1.40	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW193	24 Oct 2023	0207_MW193_231024	OMP Oct 2023	Normal	-	1.82	<0.02	-	0.75	***8.65***	-	1.83	-	**10.9**	4.5	<0.02	<0.02	0.78	2.89	<0.02	**1.48**	0.98	<0.05	<0.02	<0.02	-
MW193	10 Oct 2024	0207_MW193_241010	0207_PFASOMP_OCT_24	Normal	-	2.49	<0.05[#1]	-	0.98	***9.64***	-	2.78	-	**15.9**	9.0	<0.05[#1]	<0.05[#1]	1.42	6.22	<0.05[#1]	**2.05**	1.88	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
MW198	22 Oct 2019	0207_MW198_191022	OMP Oct 2019	Normal	-	1.06	<0.02	-	1.35	***30.9***	-	1.20	-	**9.28**	1.4	<0.02	<0.02	0.96	3.58	0.03	**1.67**	1.44	<0.05	<0.02	<0.02	-
MW198	25 Mar 2020	0207_MW198_200325	OMP Apr 2020	Normal	-	1.06	<0.16[#1]	-	1.30	***28.6***	-	1.19	-	**8.88**	<0.8[#1]	<0.16[#1]	<0.16[#1]	0.88	3.31	<0.16[#1]	**1.38**	1.33	<0.40[#1]	<0.16[#1]	<0.16[#1]	-
MW198	19 Oct 2020	0207_MW198_201019	OMP Oct 2020	Normal	-	0.60	<0.04[#1]	-	0.60	***14.0***	-	0.66	-	**4.51**	0.5	<0.04[#1]	<0.04[#1]	0.51	1.89	<0.04[#1]	**0.86**	0.82	<0.09[#1]	<0.04[#1]	<0.04[#1]	-
MW198	14 Apr 2021	0207_MW198_210414	OMP Apr 2021	Normal	-	0.14	<0.02	-	0.18	***5.40***	-	0.18	-	**1.28**	0.1	<0.02	<0.02	0.14	0.43	<0.02	0.21	0.19	<0.05	<0.02	<0.02	-
MW198	11 Oct 2021	0207_MW198_211011	OMP Oct 2021	Normal	-	0.25	<0.02	-	0.33	***6.73***	-	0.29	-	**2.00**	0.1	<0.02	<0.02	0.20	0.67	<0.02	0.31	0.25	<0.05	<0.02	<0.02	-
MW198	17 Apr 2022	0207_MW198_220417	OMP Apr 2022	Normal	-	0.23	<0.02	-	0.24	***5.99***	-	0.21	-	**1.56**	0.1	<0.02	<0.02	0.16	0.62	<0.02	0.29	0.26	<0.05	<0.02	<0.02	-
MW198	25 Oct 2022	0207_QC263_221025	OMP Oct 2022	Interlab_D	-	0.50	<0.02	-	0.65	***17.8***	-	0.65	-	**4.56**	0.5	<0.02	<0.02	0.49	1.83	<0.02	**0.82**	0.97	<0.05	<0.02	<0.02	-
MW198	04 Nov 2022	0207_MW198_221025	OMP Oct 2022	Normal	-	0.65	<0.05[#1]	-	0.82	***19.6***	-	0.78	-	**5.49**	0.6	<0.05[#1]	<0.05[#1]	0.61	2.40	<0.05[#1]	**0.98**	1.13	<0.12[#1]	<0.05[#1]	<0.05[#1]	-

						PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids									
						FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR						0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems											*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water											**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																							
MW198	04 Nov 2022	0207_QC163_221025	OMP Oct 2022	Field_D	-	0.60	<0.02	-	0.84	***18.5***	-	0.73	-	**5.05**	0.7	<0.02	<0.02	0.55	2.56	<0.02	**0.92**	1.05	<0.06[#1]	<0.02	<0.02	-
MW198	12 Apr 2023	0207_MW198_230412	OMP Apr 2023	Normal	-	0.12	<0.02	-	0.17	***4.31***	-	0.14	-	**0.99**	<0.1	<0.02	<0.02	0.08	0.24	<0.02	0.13	0.12	<0.05	<0.02	<0.02	-
MW198	24 Oct 2023	0207_MW198_231024	OMP Oct 2023	Normal	-	0.07	<0.02	-	0.16	***5.83***	-	0.11	-	**1.06**	<0.1	<0.02	<0.02	0.06	0.16	<0.02	0.12	0.10	<0.05	<0.02	<0.02	-
MW198	10 Oct 2024	0207_MW198_241010	0207_PFASOMP_OCT_24	Normal	-	0.51	<0.05[#1]	-	0.68	***13.6***	-	0.58	-	**4.55**	0.4	<0.05[#1]	<0.05[#1]	0.44	1.74	<0.05[#1]	**0.78**	0.92	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
MW201	22 Oct 2019	0207_MW201_191022	OMP Oct 2019	Normal	-	31.6	<0.02	-	10.4	***89.1***	-	30.8	-	**203**	4.2	<0.02	<0.02	6.07	37.9	0.09	**11.1**	8.39	<0.05	<0.02	<0.02	-
MW201	22 Oct 2019	0207_QC103_191022	OMP Oct 2019	Field_D	-	30.2	<0.02	-	11.8	***99.2***	-	30.0	-	**207**	4.1	<0.02	<0.02	6.30	41.3	0.10	**11.4**	8.86	<0.05	<0.02	<0.02	-
MW201	22 Oct 2019	0207_QC203_191022	OMP Oct 2019	Interlab_D	<0.01	28	<0.01	-	7.9	***100***	-	25	<0.01	**200**	5.7	<0.01	<0.01	5.0	36	0.072	**9.8**	8.0	<0.02	<0.02	<0.01	<0.02
MW201	30 Oct 2019	0207_MW201_191030	OMP Oct 2019	Normal	-	4.12	<0.0005	-	1.24	***10.4***	-	3.64	-	**28.7**	0.388	0.0011	<0.0005	0.798	6.38	0.0191	**1.71**	1.33	<0.0005	<0.0005	<0.0005	-
MW201	26 Mar 2020	0207_MW201_200326	OMP Apr 2020	Normal	-	6.30	<0.07[#1]	-	3.49	***28.9***	-	7.96	-	**52.8**	0.6	<0.07[#1]	<0.07[#1]	1.76	10.0	<0.07[#1]	**3.81**	1.97	<0.18[#1]	<0.07[#1]	<0.07[#1]	-
MW201	23 Oct 2020	0207_MW201_201023	OMP Oct 2020	Normal	-	10.2	<0.19[#1]	-	4.06	***36.2***	-	10.8	-	**69.0**	<0.9[#1]	<0.19[#1]	<0.19[#1]	2.29	16.0	<0.19[#1]	**4.36**	3.44	<0.47[#1]	<0.19[#1]	<0.19[#1]	-
MW201	15 Apr 2021	0207_MW201_210415	OMP Apr 2021	Normal	-	11.2	<0.04[#1]	-	3.88	***33.7***	-	14.8	-	**67.2**	1.9	<0.04[#1]	<0.04[#1]	2.57	17.3	<0.04[#1]	**4.67**	3.85	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW201	12 Oct 2021	0207_MW201_211012	OMP Oct 2021	Normal	-	12.6	<0.10[#1]	-	5.58	***36.5***	-	14.3	-	**80.2**	2.1	<0.10[#1]	<0.10[#1]	2.70	19.8	<0.10[#1]	**5.41**	3.57	<0.24[#1]	<0.10[#1]	<0.10[#1]	-
MW201	17 Apr 2022	0207_MW201_220417	OMP Apr 2022	Normal	-	16.8	<0.05[#1]	-	6.35	***58.5***	-	17.8	-	**104**	3.2	<0.05[#1]	<0.05[#1]	3.34	25.7	<0.05[#1]	**7.46**	5.33	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW201	17 Apr 2022	0207_QC107_220417	OMP Apr 2022	Field_D	-	12.9	<0.02	-	4.53	***50.8***	-	13.0	-	**85.7**	3.4	<0.02	<0.02	2.62	18.3	0.06	**5.32**	4.80	<0.05	<0.02	<0.02	-
MW201	17 Apr 2022	0207_QC207_220417	OMP Apr 2022	Interlab_D	<0.01	13	<0.01	-	4.4	***40***	-	12	<0.01	**79**	2.5	<0.01	<0.01	4	18	0.041	**4.3**	3.8	<0.02	<0.02	<0.01	<0.02
MW201	04 Nov 2022	0207_MW201_221025	OMP Oct 2022	Normal	-	26.5	<0.24[#1]	-	10.1	***63.0***	-	28.3	-	**147**	5.9	<0.24[#1]	<0.24[#1]	5.20	43.0	<0.24[#1]	**9.20**	9.15	<0.60[#1]	<0.24[#1]	<0.24[#1]	-
MW201	12 Apr 2023	0207_MW201_230412	OMP Apr 2023	Normal	-	37.8	<0.23[#1]	-	2.48	***2.31***	-	39.0	-	**184**	7.0	<0.23[#1]	<0.23[#1]	8.08	49.3	<0.23[#1]	**8.76**	10.4	<0.58[#1]	<0.23[#1]	<0.23[#1]	-
MW201	25 Oct 2023	0207_MW201_231025	OMP Oct 2023	Normal	-	16.4	<0.09[#1]	-	7.52	***4.89***	-	18.5	-	**134**	3.1	<0.09[#1]	<0.09[#1]	3.84	21.0	<0.09[#1]	**11.7**	5.82	<0.23[#1]	<0.09[#1]	<0.09[#1]	-
MW201	25 Oct 2023	0207_QC101_231025	OMP Oct 2023	Field_D	-	19.8	<0.09[#1]	-	6.51	***5.66***	-	18.0	-	**128**	3.5	<0.09[#1]	<0.09[#1]	4.06	22.3	<0.09[#1]	**11.3**	5.92	<0.22[#1]	<0.09[#1]	<0.09[#1]	-
MW201	25 Oct 2023	0207_QC201_231025	OMP Oct 2023	Interlab_D	<0.01	12	<0.01	-	3	***2.3***	-	11	<0.01	**98**	2.5	<0.01	<0.01	2.7	17	<0.01	**5.7**	3.8	<0.02	<0.02	<0.01	<0.02
MW201	09 Oct 2024	0207_MW201_241009	0207_PFASOMP_OCT_24	Normal	-	10.6	<0.10[#1]	-	5.77	***15.1***	-	12.0	-	**73.8**	2.3	<0.10[#1]	<0.10[#1]	2.31	17.3	<0.10[#1]	**5.62**	4.00	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.24[#1]
MW202	22 Oct 2019	0207_MW202_191022	OMP Oct 2019	Normal	-	3.94	<0.02	-	1.16	***9.25***	-	5.09	-	**32.3**	0.5	<0.02	<0.02	0.95	6.58	<0.02	**1.80**	1.41	<0.05	<0.02	<0.02	-
MW202	30 Oct 2019	0207_MW202_191030	OMP Oct 2019	Normal	-	33.2	<0.0005	-	11.4	***96.1***	-	26.9	-	**196**	1.75	0.0043	<0.0005	5.01	45.6	0.0720	**10.8**	7.91	<0.0005	<0.0005	<0.0005	-
MW202	23 Oct 2020	0207_MW202_201023	OMP Oct 2020	Normal	-	7.78	<0.40[#1]	-	8.62	***282***	-	9.30	-	**80.3**	<2.0[#1]	<0.40[#1]	<0.40[#1]	2.48	16.5	<0.40[#1]	**6.87**	4.15	<1.00[#1]	<0.40[#1]	<0.40[#1]	-
MW202	17 Apr 2021	0207_MW202_210417	OMP Apr 2021	Normal	-	9.42	<0.37[#1]	-	7.07	***301***	-	10.2	-	**85.2**	2.5	<0.37[#1]	<0.37[#1]	2.71	17.2	<0.37[#1]	**7.51**	4.47	<0.92[#1]	<0.37[#1]	<0.37[#1]	-
MW202	12 Oct 2021	0207_MW202_211012	OMP Oct 2021	Normal	-	17.1	<0.24[#1]	-	8.28	***202***	-	17.5	-	**114**	3.6	<0.24[#1]	<0.24[#1]	4.26	31.1	0.26	**9.33**	6.60	<0.60[#1]	<0.24[#1]	<0.24[#1]	-
MW202	17 Apr 2022	0207_MW202_220417	OMP Apr 2022	Normal	-	10.8	<2.50[#1]	-	9.25	***475***	-	10.2	-	**100**	<12.5[#1]	<2.50[#1]	<2.50[#1]	<2.50[#1]	21.2	<2.50[#1]	**7.75**	4.00	<6.25[#1]	<2.50[#1]	<2.50[#1]	-
MW202	24 Oct 2022	0207_MW202_221024	OMP Oct 2022	Normal	-	6.74	<0.23[#1]	-	5.01	***165***	-	6.85	-	**56.5**	1.5	<0.23[#1]	<0.23[#1]	1.98	14.3	<0.23[#1]	**4.45**	3.00	<0.58[#1]	<0.23[#1]	<0.23[#1]	-
MW202	12 Apr 2023	0207_MW202_230412	OMP Apr 2023	Normal	-	8.63	<0.24[#1]	-	5.01	***108***	-	8.80	-	**63.0**	1.9	<0.24[#1]	<0.24[#1]	1.99	13.7	<0.24[#1]	**4.22**	3.21	<0.60[#1]	<0.24[#1]	<0.24[#1]	-
MW202	25 Oct 2023	0207_MW202_231025	OMP Oct 2023	Normal	-	7.49	<0.10[#1]	-	4.34	***99.7***	-	7.45	-	**71.4**	2.0	<0.10[#1]	<0.10[#1]	1.88	12.1	<0.10[#1]	**5.95**	3.65	<0.26[#1]	<0.10[#1]	<0.10[#1]	-
MW202	09 Oct 2024	0207_MW202_241009	0207_PFASOMP_OCT_24	Normal	-	2.94	<0.42[#1]	-	2.35	***168***	-	3.90	-	**35.4**	<2.1[#1]	<0.42[#1]	<0.42[#1]	1.13	7.43	<0.42[#1]	**3.44**	1.68	<1.05[#1]	<0.42[#1]	<0.42[#1]	<1.05[#1]
MW203	23 Oct 2019	0207_MW203_191023	OMP Oct 2019	Normal	-	0.08	<0.02	-	0.03	***0.58***	-	0.06	-	**0.49**	<0.1	<0.02	<0.02	0.02	0.10	<0.02	0.04	0.03	<0.05	<0.02	<0.02	-
MW203	30 Oct 2019	0207_MW203_191030	OMP Oct 2019	Normal	-	1.97	<0.0005	-	0.619	***4.81***	-	1.84	-	**11.1**	0.203	0.0006	<0.0005	0.446	3.39	0.0114	**0.871**	0.660	<0.0005	<0.0005	<0.0005	-
MW203	25 Mar 2020	0207_MW203_200325	OMP Apr 2020	Normal	-	2.12	<0.06[#1]	-	0.71	***6.69***	-	2.04	-	**13.0**	<0.3[#1]	<0.06[#1]	<0.06[#1]	0.61	3.62	<0.06[#1]	**1.05**	0.77	<0.16[#1]	<0.06[#1]	<0.06[#1]	-
MW203	25 Mar 2020	0207_QC219_200325	OMP Apr 2020	Interlab_D	<0.01	1.9	<0.01	-	0.47	***5.1***	-	1.7	<0.01	**11**	0.51	<0.01	<0.01	0.53	3.5	0.012	**0.92**	0.75	<0.02	<0.02	<0.01	<0.02
MW203	22 Oct 2020	0207_MW203_201022	OMP Oct 2020	Normal	-	1.59	<0.04[#1]	-	0.62	***4.71***	-	1.82	-	**11.2**	0.3	<0.04[#1]	<0.04[#1]	0.56	3.15	<0.04[#1]	**0.89**	0.62	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW203	22 Oct 2020	0207_QC136_201022	OMP Oct 2020	Field_D	-	1.67	<0.04[#1]	-	0.69	***5.81***	-	1.87	-	**11.5**	<0.2[#1]	<0.04[#1]	<0.04[#1]	0.56	3.34	<0.04[#1]	**0.96**	0.68	<0.09[#1]	<0.04[#1]	<0.04[#1]	-
MW203	22 Oct 2020	0207_QC236_201022	OMP Oct 2020	Interlab_D	<0.01	1.5	<0.01	-	0.4	***4.3***	-	1.4	<0.01	**8.8**	0.4	<0.01	<0.01	0.44	2.2	0.015	**0.74**	0.62	<0.02	<0.02	<0.01	<0.02
MW203	15 Apr 2021	0207_MW203_210415	OMP Apr 2021	Normal	-	2.25	<0.18[#1]	-	0.72	***8.04***	-	2.34	-	**11.8**	<0.9[#1]	<0.18[#1]	<0.18[#1]	0.63	3.66	<0.18[#1]	**1.14**	0.92	<0.45[#1]	<0.18[#1]	<0.18[#1]	-
MW203	12 Oct 2021	0207_MW203_211012	OMP Oct 2021	Normal	-	1.83	<0.02	-	0.83	***6.46***	-	1.92	-	**11.0**	0.4	<0.02	<0.02	0.58	3.46	0.02	**1.00**	0.65	<0.05	<0.02	<0.02	-
MW203	17 Apr 2022	0207_MW203_220417	OMP Apr 2022	Normal	-	0.72	<0.02	-	0.07	***0.79***	-	0.79	-	**6.49**	0.3	<0.02	<0.02	0.25	1.29	<0.02	0.17	0.51	<0.05	<0.02	<0.02	-
MW203	24 Oct 2022	0207_MW203_221024	OMP Oct 2022	Normal	-	0.60	<0.02	-	0.29	***0.90***	-	0.67	-	**5.66**	0.2	<0.02	<0.02	0.15	1.25	<0.02	0.21	0.33	<0.05	<0.02	<0.02	-
MW203	12 Apr 2023	0207_MW203_230412	OMP Apr 2023	Normal	-	1.00	<0.02	-	0.16	***0.85***	-	1.28	-	**10.0**	0.3	<0.02	<0.02	0.30	1.58	<0.02	0.28	0.47	<0.06[#1]	<0.02	<0.02	-

Appendix B
Table 3
Historical Analytical Results

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																						
MW203	24 Oct 2023	0207_MW203_231024	OMP Oct 2023	Normal	-	1.11	<0.02	-	0.13	***0.62***	-	1.20	-	**7.94**	0.3	<0.02	<0.02	0.23	1.31	<0.02	0.24	0.50	<0.05	<0.02	<0.02	-
MW203	09 Oct 2024	0207_MW203_241009	0207_PFASOMP_OCT_24	Normal	-	1.00	<0.02	-	0.09	***0.67***	-	0.86	-	**4.41**	0.2	<0.02	<0.02	0.14	1.38	<0.02	0.11	0.40	<0.05	<0.02	<0.02	<0.05
MW204	22 Oct 2019	0207_MW204_191022	OMP Oct 2019	Normal	-	43.5	<0.02	-	3.48	***17.9***	-	36.6	-	**166**	15.0	<0.02	<0.02	6.74	53.2	0.02	**7.34**	11.7	<0.05	<0.02	<0.02	-
MW204	22 Oct 2019	0207_QC101_191022	OMP Oct 2019	Field_D	-	48.2	<0.02	-	4.00	***22.5***	-	40.3	-	**181**	12.5	<0.02	<0.02	6.82	59.7	<0.02	**7.48**	13.4	<0.05	<0.02	<0.02	-
MW204	22 Oct 2019	0207_QC201_191022	OMP Oct 2019	Interlab_D	<0.01	41	<0.01	-	2.5	***23***	-	33	<0.01	**180**	8.5	<0.01	<0.01	5.9	54	0.012	**6.7**	12	<0.02	<0.02	<0.01	<0.02
MW204	30 Oct 2019	0207_MW204_191030	OMP Oct 2019	Normal	-	34.8	<0.0005	-	2.91	***15.2***	-	26.9	-	**139**	2.12	0.0006	<0.0005	4.69	49.3	0.0131	**5.20**	8.81	<0.0005	<0.0005	<0.0005	-
MW204	25 Mar 2020	0207_MW204_200325	OMP Apr 2020	Normal	-	25.8	<0.32[#1]	-	4.02	***16.6***	-	23.9	-	**134**	<1.6[#1]	<0.32[#1]	<0.32[#1]	4.75	32.4	<0.32[#1]	**5.41**	7.38	<0.79[#1]	<0.32[#1]	<0.32[#1]	-
MW204	22 Oct 2020	0207_MW204_201022	OMP Oct 2020	Normal	-	13.6	<0.20[#1]	-	4.67	***25.3***	-	16.2	-	**101**	1.5	<0.20[#1]	<0.20[#1]	3.93	21.8	<0.20[#1]	**6.12**	4.67	<0.50[#1]	<0.20[#1]	<0.20[#1]	-
MW204	17 Apr 2021	0207_MW204_210417	OMP Apr 2021	Normal	-	14.2	<0.38[#1]	-	3.77	***13.2***	-	15.6	-	**94.1**	3.0	<0.38[#1]	<0.38[#1]	3.43	20.5	<0.38[#1]	**5.90**	4.34	<0.95[#1]	<0.38[#1]	<0.38[#1]	-
MW204	12 Oct 2021	0207_MW204_211012	OMP Oct 2021	Normal	-	16.9	<0.10[#1]	-	7.07	***17.0***	-	24.3	-	**140**	3.0	<0.10[#1]	<0.10[#1]	4.81	27.0	<0.10[#1]	**8.14**	4.58	<0.25[#1]	<0.10[#1]	<0.10[#1]	-
MW204	20 Apr 2022	0207_MW204_220420	OMP Apr 2022	Normal	-	22.0	<0.50[#1]	-	6.15	***25.2***	-	25.6	-	**175**	<2.5[#1]	<0.50[#1]	<0.50[#1]	5.35	30.6	<0.50[#1]	**10.6**	6.85	<1.25[#1]	<0.50[#1]	<0.50[#1]	-
MW204	24 Oct 2022	0207_MW204_221024	OMP Oct 2022	Normal	-	30.4	<0.43[#1]	-	14.8	***43.9***	-	35.0	-	**263**	6.2	<0.43[#1]	<0.43[#1]	8.63	55.6	<0.43[#1]	***21.6***	9.24	<1.08[#1]	<0.43[#1]	<0.43[#1]	-
MW204	12 Apr 2023	0207_MW204_230412	OMP Apr 2023	Normal	-	77.2	<0.90[#1]	-	40.3	***118***	-	86.7	-	**549**	13.1	<0.90[#1]	<0.90[#1]	18.9	104	<0.90[#1]	***41.5***	21.9	<2.25[#1]	<0.90[#1]	<0.90[#1]	-
MW204	12 Apr 2023	0207_QC104_230412	OMP Apr 2023	Field_D	-	69.0	<0.83[#1]	-	40.2	***146***	-	93.8	-	**558**	15.0	<0.83[#1]	<0.83[#1]	18.0	98.4	<0.83[#1]	***39.7***	19.8	<2.08[#1]	<0.83[#1]	<0.83[#1]	-
MW204	12 Apr 2023	0207_QC204_230412	OMP Apr 2023	Interlab_D	<0.01	52	<0.01	-	21	***71***	-	59	<0.01	**330**	10	<0.01	<0.01	11	63	0.071	***24***	14	<0.02	<0.02	<0.01	<0.02
MW204	24 Oct 2023	0207_MW204_231024	OMP Oct 2023	Normal	-	134	<0.50[#1]	-	58.2	***575***	-	142	-	**925**	22.8	<0.50[#1]	<0.50[#1]	23.2	136	<0.50[#1]	***62.4***	35.8	<1.25[#1]	<0.50[#1]	<0.50[#1]	-
MW204	09 Oct 2024	0207_MW204_241009	0207_PFASOMP_OCT_24	Normal	-	116	<5.00[#1]	-	37.5	***338***	-	111	-	**712**	28.5	<5.00[#1]	<5.00[#1]	21.0	146	<5.00[#1]	***41.0***	33.0	<12.5[#1]	<5.00[#1]	<5.00[#1]	<12.5[#1]
MW204	09 Oct 2024	0207_QC102_241009	0207_PFASOMP_OCT_24	Field_D	-	120	<5.00[#1]	-	40.5	***310***	-	122	-	**712**	<250[#1]	<5.00[#1]	<5.00[#1]	21.5	142	<5.00[#1]	***39.5***	32.5	<12.5[#1]	<5.00[#1]	<5.00[#1]	<12.5[#1]
MW204	09 Oct 2024	0207_QC202_241009	0207_PFASOMP_OCT_24	Interlab_D	-	110	<0.1[#3]	<0.1[#3]	53[#2]	***300[#2]***	58	110[#2]	-	**790[#2]**	21	<0.01	<0.01	16[#2]	170	0.26[#2]	***46[#2]***	41	<0.01	<0.01	<0.01	-
MW205	22 Oct 2019	0207_MW205_191022	OMP Oct 2019	Normal	-	1.90	<0.02	-	0.45	***3.88***	-	2.06	-	**11.4**	0.3	<0.02	<0.02	0.49	2.93	<0.02	**0.67**	0.61	<0.05	<0.02	<0.02	-
MW205	22 Oct 2019	0207_QC102_191022	OMP Oct 2019	Field_D	-	1.72	<0.02	-	0.42	***3.94***	-	2.07	-	**11.4**	0.3	<0.02	<0.02	0.46	2.74	<0.02	**0.65**	0.58	<0.05	<0.02	<0.02	-
MW205	22 Oct 2019	0207_QC202_191022	OMP Oct 2019	Interlab_D	<0.01	1.7	<0.01	-	0.39	***3.3***	-	1.5	<0.01	**9.2**	0.47	<0.01	<0.01	0.40	2.3	<0.01	**0.57**	0.57	<0.02	<0.02	<0.01	<0.02
MW205	30 Oct 2019	0207_MW205_191030	OMP Oct 2019	Normal	-	2.20	<0.0005	-	0.488	***3.67***	-	1.91	-	**9.73**	0.237	0.0009	<0.0005	0.392	3.11	0.0113	**0.640**	0.803	<0.0005	<0.0005	<0.0005	-
MW205	26 Mar 2020	0207_MW205_200326	OMP Apr 2020	Normal	-	2.08	<0.03[#1]	-	0.62	***5.89***	-	2.24	-	**11.5**	0.2	<0.03[#1]	<0.03[#1]	0.51	3.02	<0.03[#1]	**0.76**	0.64	<0.08[#1]	<0.03[#1]	<0.03[#1]	-
MW205	22 Oct 2020	0207_MW205_201022	OMP Oct 2020	Normal	-	1.41	<0.04[#1]	-	0.52	***5.72***	-	1.50	-	**8.79**	<0.2[#1]	<0.04[#1]	<0.04[#1]	0.40	2.38	<0.04[#1]	**0.62**	0.51	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW205	17 Apr 2021	0207_MW205_210417	OMP Apr 2021	Normal	-	1.39	<0.02	-	0.50	***5.58***	-	1.50	-	**8.60**	0.33	<0.02	<0.02	0.43	2.28	<0.02	**0.65**	0.53	<0.05	<0.02	<0.02	-
MW205	12 Oct 2021	0207_MW205_211012	OMP Oct 2021	Normal	-	1.24	<0.02	-	0.52	***6.17***	-	1.31	-	**7.61**	0.3	<0.02	<0.02	0.37	2.25	0.02	**0.60**	0.42	<0.05	<0.02	<0.02	-
MW205	14 Apr 2022	0207_MW205_220420	OMP Apr 2022	Normal	-	1.00	<0.02	-	0.40	***5.96***	-	1.11	-	**6.85**	0.2	<0.02	<0.02	0.31	1.78	<0.02	**0.56**	0.41	<0.05	<0.02	<0.02	-
MW205	24 Oct 2022	0207_MW205_221024	OMP Oct 2022	Normal	-	9.29	<0.24[#1]	-	0.38	***1.04***	-	9.78	-	**42.1**	2.1	<0.24[#1]	<0.24[#1]	1.84	18.8	<0.24[#1]	0.54	4.82	<0.59[#1]	<0.24[#1]	<0.24[#1]	-
MW205	12 Apr 2023	0207_MW205_230412	OMP Apr 2023	Normal	-	3.14	<0.02	-	1.18	***7.54***	-	2.80	-	**18.5**	0.8	<0.02	<0.02	0.48	4.73	<0.02	**1.03**	1.36	<0.06[#1]	<0.02	<0.02	-
MW205	24 Oct 2023	0207_MW205_231024	OMP Oct 2023	Normal	-	1.93	<0.02	-	0.90	***10.5***	-	1.74	-	**10.1**	0.5	<0.02	<0.02	0.25	2.16	<0.02	**0.62**	0.83	<0.05	<0.02	<0.02	-
MW205	09 Oct 2024	0207_MW205_241009	0207_PFASOMP_OCT_24	Normal	-	2.20	<0.05[#1]	-	<0.26[#1]	***2.98***	-	2.16	-	**10.7**	0.5	<0.05[#1]	<0.05[#1]	0.31	3.33	<0.05[#1]	0.27	0.96	<0.13[#1]	<0.05[#1]	<0.05[#1]	<0.13[#1]
MW207	06 Nov 2019	0207_MW207_191106	OMP Oct 2019	Normal	-	0.02	<0.02	-	<0.02	*0.02*	-	0.03	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW207	17 Apr 2022	0207_MW207_220417	OMP Apr 2022	Normal	-	<0.04[#1]	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW207	25 Oct 2022	0207_MW207_221025	OMP Oct 2022	Normal	-	0.11	<0.02	-	0.06	***0.42***	-	0.12	-	**0.93**	<0.1	<0.02	<0.02	0.05	0.18	<0.02	0.07	0.06	<0.05	<0.02	<0.02	-
MW207	12 Apr 2023	0207_MW207_230412	OMP Apr 2023	Normal	-	0.19	<0.02	-	0.10	***0.69***	-	0.23	-	**1.46**	<0.1	<0.02	<0.02	0.08	0.23	<0.02	0.09	0.10	<0.05	<0.02	<0.02	-
MW207	25 Oct 2023	0207_MW207_231025	OMP Oct 2023	Normal	-	0.18	<0.02	-	0.06	***0.84***	-	0.18	-	**1.42**	<0.1	<0.02	<0.02	0.06	0.16	<0.02	0.08	0.09	<0.05	<0.02	<0.02	-
MW207	10 Oct 2024	0207_MW207_241010	0207_PFASOMP_OCT_24	Normal	-	0.18	<0.02	-	<0.06[#1]	***0.84***	-	0.17	-	**1.21**	<0.2[#1]	<0.02	<0.02	0.05	0.16	<0.02	0.05	0.06	<0.05	<0.02	<0.02	<0.05
MW221	23 Oct 2019	0207_MW221_191023	OMP Oct 2019	Normal	-	0.32	<0.02	-	0.14	***1.65***	-	0.35	-	**2.07**	0.1	<0.02	<0.02	0.22	0.86	<0.02	0.32	0.23	<0.05	<0.02	<0.02	-
MW221	30 Oct 2019	0207_MWC2-I_191030	OMP Oct 2019	Normal	-	0.347	<0.0005	-	0.129	***1.72***	-	0.280	-	**1.74**	0.068	<0.0005	<0.0005	0.180	0.855	0.0113	0.316	0.213	<0.0005	<0.0005	<0.0005	-
MW221	25 Mar 2020	0207_MW221_200325	OMP Apr 2020	Normal	-	0.39	<0.03[#1]	-	0.18	***2.25***	-	0.42	-	**2.30**	<0.2[#1]	<0.03[#1]	<0.03[#1]	0.23	0.95	<0.03[#1]	0.35	0.28	<0.08[#1]	<0.03[#1]	<0.03[#1]	-
MW221	19 Oct 2020	0207_MW221_201019	OMP Oct 2020	Normal	-	0.40	<0.02	-	0.19	***2.73***	-	0.40	-	**2.16**	0.18	<0.02	<0.02	0.28	1.04	<0.02	0.42	0.30	<0.05	<0.02	<0.02	-
MW221	14 Apr 2021	0207_MW221_210414	OMP Apr 2021	Normal	-	0.35	<0.02	-	0.12	***1.71***	-	0.34	-	**1.69**	0.2	<0.02	<0.02	0.25	0.92	<0.02	0.36	0.28	<0.05	<0.02	<0.02	-

Appendix B
Table 3
Historical Analytical Results

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids										PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**					
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																						
MW221	12 Oct 2021	0207_MW221_211012	OMP Oct 2021	Normal	-	0.42	<0.02	-	0.18	***1.83***	-	0.42	-	**2.04**	0.2	<0.02	<0.02	0.26	1.11	<0.02	0.38	0.25	<0.05	<0.02	<0.02	-
MW221	12 Oct 2021	0207_QC157_211012	OMP Oct 2021	Field_D	-	0.40	<0.02	-	0.20	***1.68***	-	0.48	-	**2.26**	0.2	<0.02	<0.02	0.28	1.04	<0.02	0.42	0.26	<0.05	<0.02	<0.02	-
MW221	12 Oct 2021	0207_QC257_21012	OMP Oct 2021	Interlab_D	<0.01	0.33	<0.01	-	0.081	***1.1***	-	0.31	<0.01	**1.7**	0.14	<0.01	<0.01	0.2	0.71	<0.01	0.29	0.21	<0.02	<0.02	<0.01	<0.02
MW221	17 Apr 2022	0207_MW221_220417	OMP Apr 2022	Normal	-	0.33	<0.02	-	0.16	***2.34***	-	0.29	-	**1.70**	0.1	<0.02	<0.02	0.21	0.88	<0.02	0.37	0.24	<0.05	<0.02	<0.02	-
MW221	25 Oct 2022	0207_MW221_221025	OMP Oct 2022	Normal	-	0.36	<0.02	-	0.22	***2.28***	-	0.41	-	**2.03**	0.2	<0.02	<0.02	0.25	1.12	<0.02	0.39	0.24	<0.05	<0.02	<0.02	-
MW221	12 Apr 2023	0207_MW221_230412	OMP Apr 2023	Normal	-	0.38	<0.02	-	0.19	***2.09***	-	0.37	-	**1.85**	0.1	<0.02	<0.02	0.23	0.87	<0.02	0.38	0.24	<0.05	<0.02	<0.02	-
MW221	25 Oct 2023	0207_MW221_231025	OMP Oct 2023	Normal	-	0.46	<0.02	-	0.16	***2.24***	-	0.37	-	**2.06**	0.2	<0.02	<0.02	0.23	0.82	<0.02	0.40	0.28	<0.05	<0.02	<0.02	-
MW221	09 Oct 2024	0207_MW221_241009	0207_PFASOMP_OCT_24	Normal	-	0.36	<0.02	-	0.15	***2.04***	-	0.36	-	**1.95**	<0.2[#1]	<0.02	<0.02	0.20	0.80	<0.04[#1]	0.32	0.26	<0.05	<0.02	<0.02	<0.05
MW222	23 Oct 2019	0207_MW222_191023	OMP Oct 2019	Normal	-	1.66	<0.02	-	1.02	***14.8***	-	1.88	-	**13.6**	1.4	0.03	<0.02	3.52	7.93	0.89	**5.31**	3.80	<0.05	<0.02	<0.02	-
MW222	30 Oct 2019	0207_MWC2-K_191030	OMP Oct 2019	Normal	-	1.75	0.0066	-	0.973	***9.19***	-	1.71	-	**9.31**	0.547	0.0194	<0.0005	2.47	7.20	0.641	**4.49**	3.53	<0.0005	<0.0005	<0.0005	-
MW222	25 Mar 2020	0207_MW222_200325	OMP Apr 2020	Normal	-	1.81	<0.06[#1]	-	1.35	***19.4***	-	1.89	-	**12.0**	0.9	<0.06[#1]	<0.06[#1]	3.58	7.18	1.18	**5.56**	3.66	<0.16[#1]	<0.06[#1]	<0.06[#1]	-
MW222	19 Oct 2020	0207_MW222_201019	OMP Oct 2020	Normal	-	1.67	<0.10[#1]	-	1.17	***14.6***	-	1.95	-	**12.1**	1.40	<0.10[#1]	<0.10[#1]	3.76	8.54	0.86	**5.28**	4.71	<0.25[#1]	<0.10[#1]	<0.10[#1]	-
MW222	14 Apr 2021	0207_MW222_210414	OMP Apr 2021	Normal	-	2.17	<0.10[#1]	-	1.51	***23.6***	-	2.34	-	**14.4**	2.27	<0.10[#1]	<0.10[#1]	4.62	9.84	1.33	**6.37**	5.65	<0.25[#1]	<0.10[#1]	<0.10[#1]	-
MW222	12 Oct 2021	0207_MW222_211012	OMP Oct 2021	Normal	-	1.82	<0.05[#1]	-	1.44	***15.6***	-	1.94	-	**12.3**	2.0	<0.05[#1]	<0.05[#1]	4.17	9.61	0.88	**5.83**	5.00	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW222	12 Oct 2021	0207_QC158_211012	OMP Oct 2021	Field_D	-	1.72	<0.02	-	1.61	***17.9***	-	2.02	-	**12.5**	2.1	0.02	<0.02	4.35	9.38	1.04	**6.80**	5.06	<0.05	<0.02	<0.02	-
MW222	12 Oct 2021	0207_QC258_21012	OMP Oct 2021	Interlab_D	<0.01	1.4	<0.01	-	0.88	***11***	-	1.3	<0.01	**8.8**	1.9	0.015	<0.01	3.1	6.1	0.84	**4.6**	4	<0.02	<0.02	<0.01	<0.02
MW222	17 Apr 2022	0207_MW222_220417	OMP Apr 2022	Normal	-	0.74	<0.05[#1]	-	0.60	***15.9***	-	0.70	-	**5.34**	1.0	<0.05[#1]	<0.05[#1]	1.76	3.80	0.75	**3.14**	2.49	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW222	17 Apr 2022	0207_QC106_220417	OMP Apr 2022	Field_D	-	0.70	<0.02	-	0.93	***17.7***	-	0.85	-	**5.49**	1.1	0.03	<0.02	2.02	3.67	0.76	**3.10**	2.14	<0.05	<0.02	<0.02	-
MW222	17 Apr 2022	0207_QC206_220417	OMP Apr 2022	Interlab_D	0.012	0.73	<0.01	-	0.7	***12***	-	0.71	<0.01	**4.6**	1.2	0.039	<0.01	1.6	3.7	1.2	**3**	1.6	<0.02	<0.02	<0.01	<0.02
MW222	26 Oct 2022	0207_MW222_221026	OMP Oct 2022	Normal	-	0.57	<0.02	-	0.47	***13.7***	-	0.47	-	**3.71**	0.6	0.02	<0.02	1.02	2.17	0.48	**1.70**	1.32	<0.06[#1]	<0.02	<0.02	-
MW222	12 Apr 2023	0207_MW222_230412	OMP Apr 2023	Normal	-	0.47	<0.02	-	0.54	***15.2***	-	0.55	-	**3.77**	0.5	0.04	<0.02	0.87	1.78	0.47	**1.36**	1.24	<0.05	<0.02	<0.02	-
MW222	25 Oct 2023	0207_MW222_231025	OMP Oct 2023	Normal	-	0.68	<0.02	-	0.46	***17.3***	-	0.57	-	**4.31**	0.7	0.03	<0.02	1.00	1.83	0.52	**1.72**	1.60	<0.05	<0.02	<0.02	-
MW222	03 Apr 2024	0207_MW222_240403	OMP Apr 2024	Normal	-	0.41	<0.02	-	0.42	***14.9***	-	0.43	-	**3.21**	0.6	0.03	<0.02	0.88	1.73	0.40	**1.30**	1.33	<0.05	<0.02	<0.02	-
MW223	23 Oct 2019	0207_MW223_191023	OMP Oct 2019	Normal	-	0.97	<0.02	-	0.72	***18.5***	-	1.11	-	**8.90**	3.7	0.10	<0.02	6.44	11.5	2.51	**8.50**	22.7	<0.05	<0.02	<0.02	-
MW223	31 Oct 2019	0207_MWC2-L_191031	OMP Oct 2019	Normal	-	0.965	0.0186	-	0.591	***7.46***	-	1.07	-	**7.05**	1.52	0.0401	<0.0005	4.60	10.7	1.49	**6.45**	19.4	<0.0005	<0.0005	<0.0005	-
MW223	25 Mar 2020	0207_MW223_200325	OMP Apr 2020	Normal	-	1.23	<0.06[#1]	-	0.94	***13.2***	-	1.33	-	**9.96**	2.6	<0.06[#1]	<0.06[#1]	6.59	11.8	2.13	**8.57**	22.8	<0.16[#1]	<0.06[#1]	<0.06[#1]	-
MW223	19 Oct 2020	0207_MW223_201019	OMP Oct 2020	Normal	-	1.02	<0.04[#1]	-	0.80	***15.0***	-	1.11	-	**8.66**	5.8	0.06	<0.04[#1]	7.69	13.3	2.14	**8.44**	28.7	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW223	14 Apr 2021	0207_MW223_210414	OMP Apr 2021	Normal	-	1.22	<0.07[#1]	-	0.97	***18.6***	-	1.29	-	**8.92**	6.4	<0.07[#1]	<0.07[#1]	10.2	15.1	2.24	**9.72**	37.4	<0.18[#1]	<0.07[#1]	<0.07[#1]	-
MW223	12 Oct 2021	0207_MW223_211012	OMP Oct 2021	Normal	-	0.98	<0.02	-	0.86	***14.6***	-	1.11	-	**8.89**	8.9	0.05	<0.02	13.1	18.7	2.23	**11.0**	40.8	<0.06[#1]	<0.02	<0.02	-
MW223	13 Apr 2022	0207_MW223_220413	OMP Apr 2022	Normal	-	0.77	<0.05[#1]	-	0.62	***14.8***	-	0.78	-	**6.40**	6.1	<0.05[#1]	<0.05[#1]	16.4	14.2	3.04	**10.2**	30.9	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW223	13 Apr 2022	0207_QC100_220413	OMP Apr 2022	Field_D	-	0.68	<0.02	-	1.01	***18.0***	-	1.02	-	**7.26**	6.2	0.03	<0.02	14.3	12.7	2.97	**10.0**	23.3	<0.05	<0.02	<0.02	-
MW223	13 Apr 2022	0207_QC200_220413	OMP Apr 2022	Interlab_D	0.029	0.71	<0.01	-	0.82	***15***	-	0.78	0.014	**5.4**	4.7	0.013	<0.01	15	14	3.2	**5.1**	22	<0.02	<0.02	<0.01	<0.02
MW223	26 Oct 2022	0207_MW223_221026	OMP Oct 2022	Normal	-	0.50	<0.05[#1]	-	0.74	***14.6***	-	0.61	-	**5.95**	4.7	0.05	<0.05[#1]	11.6	14.5	2.30	**8.86**	18.8	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW223	12 Apr 2023	0207_MW223_230412	OMP Apr 2023	Normal	-	0.41	<0.02	-	0.77	***13.7***	-	0.43	-	**3.29**	5.3	0.06	<0.02	9.01	10.8	1.98	**5.18**	18.5	<0.05	<0.02	<0.02	-
MW223	25 Oct 2023	0207_MW223_231025	OMP Oct 2023	Normal	-	0.75	<0.02	-	0.21	***10.2***	-	0.52	-	**3.55**	6.9	0.07	<0.02	9.62	12.8	0.24	**5.20**	32.5	<0.05	<0.02	<0.02	-
MW223	25 Oct 2023	0207_QC102_231025	OMP Oct 2023	Field_D	-	0.79	<0.02	-	0.30	***10.8***	-	0.76	-	**4.34**	7.7	0.07	<0.02	9.84	14.6	0.28	**6.36**	30.6	<0.05	<0.02	<0.02	-
MW223	25 Oct 2023	0207_QC202_231025	OMP Oct 2023	Interlab_D	<0.01	0.61	<0.01	-	0.18	***7.6***	-	0.55	<0.01	**2.6**	4.7	0.063	<0.01	8	10	0.22	**3.2**	22	<0.02	<0.02	<0.01	<0.02
MW223	03 Apr 2024	0207_MW223_240403	OMP Apr 2024	Normal	-	0.54	<0.02	-	0.50	***12.2***	-	0.65	-	**5.16**	4.6	0.04	<0.02	10.0	12.9	0.81	**5.90**	26.6	<0.05	<0.02	<0.02	-
MW229	22 Oct 2019	0207_MW229_191022	OMP Oct 2019	Normal	-	0.61	<0.02	-	0.43	***24.5***	-	0.74	-	**6.24**	0.1	<0.02	<0.02	0.14	1.41	<0.02	0.39	0.26	<0.05	<0.02	<0.02	-
MW229	22 Oct 2019	0207_QC104_191022	OMP Oct 2019	Field_D	-	0.59	<0.02	-	0.44	***26.2***	-	0.78	-	**6.56**	0.3	<0.02	<0.02	0.14	1.36	<0.02	0.40	0.26	<0.05	<0.02	<0.02	-
MW229	22 Oct 2019	0207_QC204_191022	OMP Oct 2019	Interlab_D	<0.01	0.54	<0.01	-	0.32	***30***	-	0.62	<0.01	**5.7**	0.15	<0.01	<0.01	0.12	1.2	<0.01	0.33	0.23	<0.02	<0.02	<0.01	<0.02
MW229	30 Oct 2019	0207_MWC3-I_191030	OMP Oct 2019	Normal	-	0.657	0.0056	-	0.360	***22.2***	-	0.574	-	**5.78**	0.052	0.0016	<0.0005	0.134	1.43	0.0040	0.371	0.222	<0.0005	<0.0005	<0.0005	-
MW229	25 Mar 2020	0207_MW229_200325	OMP Apr 2020	Normal	-	0.64	<0.16[#1]	-	0.46	***28.4***	-	0.78	-	**6.42**	<0.8[#1]	<0.16[#1]	<0.16[#1]	<0.16[#1]	1.39	<0.16[#1]	0.34	0.26	<0.40[#1]	<0.16[#1]	<0.16[#1]	-
MW229	20 Oct 2020	0207_MW229_201020	OMP Oct 2020	Normal	-	0.60	<0.07[#1]	-	0.46	***19.9***	-	0.84	-	**6.40**	<0.4[#1]	<0.07[#1]	<0.07[#1]	0.16	1.62	<0.07[#1]	0.43	0.26	<0.18[#1]	<0.07[#1]	<0.07[#1]	-

Appendix B
Table 3
Historical Analytical Results

		PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
		FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR		0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems							*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water							**0.07**				**0.07**							**0.56**					
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW229	20 Apr 2021	0207_MW229_210414	OMP Apr 2021	Normal	-	0.77	<0.05[#1]	-	0.59	***32.3***	-	1.00	-	**7.48**	<0.3[#1]	<0.05[#1]	<0.05[#1]	0.17	1.82	<0.05[#1]	0.54	0.32	<0.13[#1]	<0.05[#1]	<0.05[#1]	-
MW229	12 Oct 2021	0207_MW229_211012	OMP Oct 2021	Normal	-	0.79	<0.05[#1]	-	0.63	***22.4***	-	1.00	-	**7.35**	<0.2[#1]	<0.05[#1]	<0.05[#1]	0.17	1.93	<0.05[#1]	0.54	0.30	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW229	12 Oct 2021	0207_QC159_211012	OMP Oct 2021	Field_D	-	0.83	<0.04[#1]	-	0.72	***32.9***	-	1.06	-	**7.95**	0.3	<0.04[#1]	<0.04[#1]	0.19	1.78	<0.04[#1]	**0.57**	0.32	<0.11[#1]	<0.04[#1]	<0.04[#1]	-
MW229	12 Oct 2021	0207_QC259_21012	OMP Oct 2021	Interlab_D	<0.01	0.62	<0.01	-	0.29	***19***	-	0.64	<0.01	**5.5**	0.17	<0.01	<0.01	0.12	1.3	<0.01	0.37	0.25	<0.02	<0.02	<0.01	<0.02
MW229	13 Apr 2022	0207_MW229_220413	OMP Apr 2022	Normal	-	0.60	<0.05[#1]	-	0.40	***20.6***	-	0.61	-	**5.56**	<0.2[#1]	<0.05[#1]	<0.05[#1]	0.11	1.60	<0.05[#1]	0.41	0.23	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW229	27 Oct 2022	0207_MW229_221027	OMP Oct 2022	Normal	-	0.67	<0.05[#1]	-	0.79	***29.0***	-	0.96	-	**9.23**	<0.2[#1]	<0.05[#1]	<0.05[#1]	0.20	2.47	<0.05[#1]	0.55	0.33	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW229	13 Apr 2023	0207_MW229_230413	OMP Apr 2023	Normal	-	1.06	<0.04[#1]	-	0.90	***34.9***	-	1.19	-	**11.1**	<0.2[#1]	<0.04[#1]	<0.04[#1]	0.23	2.37	<0.04[#1]	**0.70**	0.37	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW229	25 Oct 2023	0207_MW229_231025	OMP Oct 2023	Normal	-	0.96	<0.02	-	0.91	***45.3***	-	1.00	-	**11.3**	0.2	<0.02	<0.02	0.19	2.21	<0.02	**0.87**	0.40	<0.06[#1]	<0.02	<0.02	-
MW229	03 Apr 2024	0207_MW229_240403	OMP Apr 2024	Normal	-	0.55	<0.02	-	0.59	***31.6***	-	0.64	-	**8.08**	0.1	<0.02	<0.02	0.14	1.56	<0.02	0.51	0.26	<0.05	<0.02	<0.02	-
MW229	03 Apr 2024	0207_QC102_240403	OMP Apr 2024	Field_D	-	0.47	<0.02	-	0.58	***27.3***	-	0.58	-	**6.76**	0.1	<0.02	<0.02	0.14	1.72	<0.02	0.52	0.27	<0.05	<0.02	<0.02	-
MW229	03 Apr 2024	0207_QC202_240403	OMP Apr 2024	Interlab_D	<0.01	0.52	<0.01	-	0.42	***17***	-	0.59	<0.01	**5.3**	0.14	<0.01	<0.01	0.12	1.4	<0.01	0.4	0.24	<0.02	<0.02	<0.01	<0.02
MW229	09 Oct 2024	0207_MW229_241009	0207_PFASOMP_OCT_24	Normal	-	1.07	<0.09[#1]	-	<0.89[#1]	***49.5***	-	<0.89[#1]	-	**11.3**	<4.5[#1]	<0.09[#1]	<0.09[#1]	<0.89[#1]	2.77	<0.09[#1]	**<0.89[#1]**	<0.89[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.22[#1]
MW230	23 Oct 2019	0207_MW230_191023	OMP Oct 2019	Normal	-	0.92	<0.02	-	0.46	***4.12***	-	0.98	-	**5.91**	2.8	<0.02	<0.02	5.46	9.48	0.57	**4.60**	16.2	<0.05	<0.02	<0.02	-
MW230	30 Oct 2019	0207_MWD2-A_191030	OMP Oct 2019	Normal	-	0.940	0.0020	-	0.612	***6.53***	-	0.978	-	**5.49**	1.15	0.0183	<0.0005	4.20	8.91	0.672	**4.47**	13.7	<0.0005	<0.0005	<0.0005	-
MW230	31 Oct 2019	0207_QC1mw_191031	OMP Oct 2019	Field_D	-	0.696	0.0008	-	0.411	***4.70***	-	0.667	-	**3.59**	1.08	0.0193	<0.0005	2.85	6.30	0.492	**3.01**	9.01	<0.0005	<0.0005	<0.0005	-
MW230	25 Mar 2020	0207_MW230_200325	OMP Apr 2020	Normal	-	1.10	<0.03[#1]	-	0.70	***7.74***	-	1.16	-	**6.61**	1.9	<0.03[#1]	<0.03[#1]	5.35	9.34	0.70	**4.94**	15.5	<0.08[#1]	<0.03[#1]	<0.03[#1]	-
MW230	19 Oct 2020	0207_MW230_201019	OMP Oct 2020	Normal	-	1.11	<0.04[#1]	-	0.77	***8.61***	-	1.11	-	**6.72**	5.0	<0.04[#1]	<0.04[#1]	6.27	11.9	0.65	**5.32**	22.9	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW230	14 Apr 2021	0207_MW230_210414	OMP Apr 2021	Normal	-	1.11	<0.04[#1]	-	0.78	***11.0***	-	1.20	-	**6.31**	4.8	<0.04[#1]	<0.04[#1]	7.22	12.3	0.94	**5.87**	25.3	<0.09[#1]	<0.04[#1]	<0.04[#1]	-
MW230	14 Apr 2021	0207_QC146_210414	OMP Apr 2021	Field_D	-	1.02	<0.04[#1]	-	0.60	***8.40***	-	1.01	-	**5.45**	5.1	<0.04[#1]	<0.04[#1]	6.82	12.8	0.86	**5.96**	25.2	<0.09[#1]	<0.04[#1]	<0.04[#1]	-
MW230	14 Apr 2021	0207_QC246_210414	OMP Apr 2021	Interlab_D	<0.01	0.94	<0.01	-	0.49	***6.4***	-	0.83	<0.01	**4.4**	3.7	0.017	<0.01	4.8	8.3	0.72	**3.6**	16	<0.02	<0.02	<0.01	<0.02
MW230	12 Oct 2021	0207_MW230_211012	OMP Oct 2021	Normal	-	0.98	<0.02	-	0.74	***10.3***	-	0.96	-	**6.66**	4.7	0.04	<0.02	8.33	13.4	1.73	**7.44**	22.5	<0.06[#1]	<0.02	<0.02	-
MW230	17 Apr 2022	0207_MW230_220417	OMP Apr 2022	Normal	-	0.53	<0.02	-	0.34	***5.80***	-	0.55	-	**4.50**	3.8	0.05	<0.02	6.59	7.67	1.56	**5.87**	13.9	<0.06[#1]	<0.02	<0.02	-
MW230	26 Oct 2022	0207_MW230_221026	OMP Oct 2022	Normal	-	0.34	<0.02	-	0.14	***0.99***	-	0.37	-	**2.28**	0.2	<0.02	<0.02	0.28	0.96	0.07	0.40	0.40	<0.05	<0.02	<0.02	-
MW230	12 Apr 2023	0207_MW230_230412	OMP Apr 2023	Normal	-	0.34	<0.02	-	0.05	***0.48***	-	0.30	-	**1.24**	0.3	<0.02	<0.02	0.17	0.73	0.02	0.18	0.48	<0.05	<0.02	<0.02	-
MW230	25 Oct 2023	0207_MW230_231025	OMP Oct 2023	Normal	-	0.46	<0.02	-	0.14	***2.99***	-	0.38	-	**2.34**	2.0	0.03	<0.02	2.36	3.49	0.39	**1.81**	6.24	<0.05	<0.02	<0.02	-
MW230	03 Apr 2024	0207_MW230_240403	OMP Apr 2024	Normal	-	0.29	<0.02	-	0.14	***3.42***	-	0.31	-	**1.92**	1.9	<0.02	<0.02	2.51	4.08	0.34	**1.54**	6.57	<0.05	<0.02	<0.02	-
MW230	03 Apr 2024	0207_QC103_240403	OMP Apr 2024	Field_D	-	0.26	<0.02	-	0.14	***2.73***	-	0.33	-	**2.11**	1.8	<0.02	<0.02	2.47	4.44	0.31	**1.51**	6.76	<0.05	<0.02	<0.02	-
MW230	03 Apr 2024	0207_QC203_240403	OMP Apr 2024	Interlab_D	<0.01	0.28	<0.01	-	0.078	***1.6***	-	0.26	<0.01	**1.7**	1.9	0.011	<0.01	1.6	2.7	0.29	**1.4**	4.7	<0.02	<0.02	<0.01	<0.02
MW230	09 Oct 2024	0207_MW230_241009	0207_PFASOMP_OCT_24	Normal	-	0.50	<0.02	-	0.20	***4.20***	-	0.52	-	**3.07**	2.1	0.04	<0.02	4.33	5.86	1.01	**2.90**	7.90	<0.05	<0.02	<0.02	<0.05
MW232	23 Oct 2019	0207_MW232_191023	OMP Oct 2019	Normal	-	0.32	<0.02	-	0.18	***21.2***	-	0.45	-	**3.33**	0.7	0.97	<0.02	1.30	2.05	0.43	**1.28**	3.31	<0.05	<0.02	<0.02	-
MW232	01 Apr 2020	0207_MW232_200401	OMP Apr 2020	Normal	-	0.33	<0.02	-	0.33	***12.4***	-	0.37	-	**2.53**	0.7	0.40	<0.02	1.10	1.52	0.38	**1.11**	1.86	<0.05	<0.02	<0.02	-
MW232	20 Oct 2020	0207_MW232_201020	OMP Oct 2020	Normal	-	0.23	<0.04[#1]	-	0.28	***14.3***	-	0.32	-	**2.82**	0.8	0.45	<0.04[#1]	1.08	1.56	0.38	**1.16**	2.31	<0.09[#1]	<0.04[#1]	<0.04[#1]	-
MW232	14 Apr 2021	0207_MW232_210414	OMP Apr 2021	Normal	-	0.33	<0.04[#1]	-	0.44	***21.2***	-	0.49	-	**3.52**	0.7	0.42	<0.04[#1]	1.20	1.71	0.37	**1.42**	2.34	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW232	13 Oct 2021	0207_MW232_211013	OMP Oct 2021	Normal	-	0.08	<0.02	-	0.04	***4.54***	-	0.12	-	**1.19**	0.5	0.35	<0.02	0.68	1.32	0.12	**0.59**	2.09	<0.06[#1]	<0.02	<0.02	-
MW232	17 Apr 2022	0207_MW232_220417	OMP Apr 2022	Normal	-	0.63	<0.05[#1]	-	0.42	***14.9***	-	0.72	-	**5.85**	0.9	0.22	<0.05[#1]	1.10	2.34	0.29	**1.50**	2.63	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW232	27 Oct 2022	0207_MW232_221027	OMP Oct 2022	Normal	-	0.67	<0.05[#1]	-	0.27	***9.67***	-	0.76	-	**6.50**	1.4	0.25	<0.05[#1]	1.17	2.39	0.25	**1.56**	3.59	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW232	12 Apr 2023	0207_MW232_230412	OMP Apr 2023	Normal	-	0.83	<0.02	-	0.98	***16.1***	-	1.22	-	**6.16**	1.1	0.38	<0.02	1.17	2.32	0.47	**1.70**	2.74	<0.05	<0.02	<0.02	-
MW232	25 Oct 2023	0207_MW232_231025	OMP Oct 2023	Normal	-	3.42	<0.02	-	0.16	***2.87***	-	2.54	-	**7.43**	2.7	0.14	<0.02	2.06	7.15	0.16	**2.17**	9.10	<0.05	<0.02	<0.02	-
MW232	03 Apr 2024	0207_MW232_240403	OMP Apr 2024	Normal	-	0.12	<0.02	-	0.10	***7.24***	-	0.10	-	**0.97**	0.2	0.21	<0.02	0.49	0.54	0.18	0.46	0.76	<0.05	<0.02	<0.02	-
MW233	24 Oct 2019	0207_MW233_191024	OMP Oct 2019	Normal	-	0.10	<0.02	-	0.05	***0.63***	-	0.10	-	**1.11**	<0.1	<0.02	<0.02	0.04	0.16	<0.02	0.22	0.06	<0.05	<0.02	<0.02	-
MW233	26 Mar 2020	0207_MW233_200326	OMP Apr 2020	Normal	-	0.20	<0.02	-	<0.02	***0.45***	-	0.18	-	**0.82**	<0.1	<0.02	<0.02	0.04	0.25	<0.02	0.05	0.06	<0.05	<0.02	<0.02	-
MW233	21 Oct 2020	0207_MW233_201021	OMP Oct 2020	Normal	-	0.21	<0.02	-	<0.02	***0.27***	-	0.18	-	**1.00**	<0.10	<0.02	<0.02	0.04	0.19	<0.02	0.05	<0.06[#1]	<0.05	<0.02	<0.02	-
MW233	17 Apr 2021	0207_MW233_210417	OMP Apr 2021	Normal	-	0.21	<0.02	-	0.03	***0.54***	-	0.17	-	**0.96**	<0.10	<0.02	<0.02	0.04	0.21	<0.02	0.07	0.06	<0.05	<0.02	<0.02	-

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																						
MW233	14 Oct 2021	0207_MW233_211014	OMP Oct 2021	Normal	-	0.17	<0.02	-	0.05	***0.91***	-	0.16	-	**1.06**	<0.1	<0.02	<0.02	0.04	0.22	<0.02	0.09	0.06	<0.05	<0.02	<0.02	-
MW233	20 Apr 2022	0207_MW233_220420	OMP Apr 2022	Normal	-	0.16	<0.02	-	<0.02	***0.22***	-	0.12	-	**0.63**	<0.1	<0.02	<0.02	0.02	0.13	<0.02	0.03	0.04	<0.05	<0.02	<0.02	-
MW233	20 Apr 2022	0207_QC113_220420	OMP Apr 2022	Field_D	-	0.16	<0.02	-	<0.02	***0.22***	-	0.10	-	**0.66**	<0.1	<0.02	<0.02	0.02	0.13	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	20 Apr 2022	0207_QC213_220420	OMP Apr 2022	Interlab_D	<0.01	0.16	<0.01	-	<0.01	***0.17***	-	0.12	<0.01	**0.64**	0.056	<0.01	<0.01	0.013	0.092	<0.01	0.014	0.035	<0.02	<0.02	<0.01	<0.02
MW233	24 Nov 2022	0207_MW233_221124	OMP Oct 2022	Normal	-	0.11	<0.02	-	<0.02	***0.15***	-	0.10	-	**0.59**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	13 Apr 2023	0207_MW233_230413	OMP Apr 2023	Normal	-	0.21	<0.02	-	<0.02	***0.26***	-	0.14	-	**0.77**	<0.1	<0.02	<0.02	<0.02	0.13	<0.02	0.03	0.04	<0.05	<0.02	<0.02	-
MW233	13 Apr 2023	0207_QC105_230413	OMP Apr 2023	Field_D	-	0.19	<0.02	-	0.02	***0.27***	-	0.16	-	**0.81**	<0.1	<0.02	<0.02	0.02	0.14	<0.02	0.04	0.04	<0.05	<0.02	<0.02	-
MW233	13 Apr 2023	0207_QC205_230413	OMP Apr 2023	Interlab_D	<0.01	0.14	<0.01	-	0.02	***0.25***	-	0.12	<0.01	**0.79**	0.053	<0.01	<0.01	0.016	0.1	<0.01	0.037	0.031	<0.02	<0.02	<0.01	<0.02
MW233	26 Oct 2023	0207_MW233_231026	OMP Oct 2023	Normal	-	0.11	<0.02	-	<0.02	***0.15***	-	0.10	-	**0.68**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.04	0.03	<0.05	<0.02	<0.02	-
MW233	03 Apr 2024	0207_MW233_240403	OMP Apr 2024	Normal	-	0.08	<0.02	-	<0.02	***0.19***	-	0.06	-	**0.48**	<0.1	<0.02	<0.02	<0.02	0.09	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	03 Apr 2024	0207_QC104_240403	OMP Apr 2024	Field_D	-	0.08	<0.02	-	<0.02	***0.17***	-	0.08	-	**0.59**	<0.1	<0.02	<0.02	<0.02	0.09	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW233	03 Apr 2024	0207_QC204_240403	OMP Apr 2024	Interlab_D	<0.01	0.096	<0.01	-	<0.01	***0.16***	-	0.066	<0.01	**0.5**	<0.05	<0.01	<0.01	<0.01	0.065	<0.01	0.023	0.024	<0.02	<0.02	<0.01	<0.02
MW233	10 Oct 2024	0207_MW233_241010	0207_PFASOMP_OCT_24	Normal	-	0.09	<0.02	-	<0.04[#1]	***0.29***	-	0.07	-	**0.46**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.11	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.05
MW235	23 Oct 2019	0207_MW235_191023	OMP Oct 2019	Normal	-	6.06	<0.02	-	0.32	***4.83***	-	6.66	-	**23.0**	1.4	<0.02	<0.02	1.13	11.1	<0.02	**0.91**	2.32	<0.05	<0.02	<0.02	-
MW235	01 Apr 2020	0207_MW235_200401	OMP Apr 2020	Normal	-	4.90	<0.02	-	0.35	***4.81***	-	4.67	-	**16.4**	1.5	<0.02	<0.02	0.79	9.32	<0.02	0.54	2.11	<0.05	<0.02	<0.02	-
MW235	01 Apr 2020	0207_QC122_200401	OMP Apr 2020	Field_D	-	4.89	<0.02	-	0.37	***4.78***	-	4.56	-	**16.7**	1.6	<0.02	<0.02	0.80	9.58	<0.02	**0.56**	2.08	<0.05	<0.02	<0.02	-
MW235	01 Apr 2020	0207_QC222_200401	OMP Apr 2020	Interlab_D	<0.01	4.1	<0.01	-	0.24	***3.0***	-	3.3	<0.01	**12**	1.7	<0.01	<0.01	0.61	7.4	<0.01	0.49	1.5	<0.02	<0.02	<0.01	<0.02
MW235	20 Oct 2020	0207_MW235_201020	OMP Oct 2020	Normal	-	4.86	<0.04[#1]	-	0.28	***4.38***	-	4.77	-	**13.7**	1.4	<0.04[#1]	<0.04[#1]	0.67	9.48	<0.04[#1]	0.54	1.97	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW235	14 Apr 2021	0207_MW235_210414	OMP Apr 2021	Normal	-	6.73	<0.04[#1]	-	0.40	***5.29***	-	7.34	-	**20.1**	1.8	<0.04[#1]	<0.04[#1]	1.26	12.8	<0.04[#1]	**1.04**	2.72	<0.09[#1]	<0.04[#1]	<0.04[#1]	-
MW235	13 Oct 2021	0207_MW235_211013	OMP Oct 2021	Normal	-	6.94	<0.02	-	0.61	***5.19***	-	8.20	-	**22.1**	1.9	<0.02	<0.02	1.27	13.7	<0.02	**1.03**	2.53	<0.05	<0.02	<0.02	-
MW235	20 Apr 2022	0207_MW235_220420	OMP Apr 2022	Normal	-	1.81	<0.05[#1]	-	0.10	***4.80***	-	1.80	-	**5.90**	0.5	<0.05[#1]	<0.05[#1]	0.22	3.10	<0.05[#1]	0.18	0.77	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW235	26 Oct 2022	0207_MW235_221026	OMP Oct 2022	Normal	-	3.94	<0.02	-	0.28	***5.16***	-	3.20	-	**9.12**	1.2	<0.02	<0.02	0.40	7.78	<0.02	0.30	1.57	<0.05	<0.02	<0.02	-
MW235	11 Apr 2023	0207_MW235_230411	OMP Apr 2023	Normal	-	4.39	<0.02	-	0.22	***4.27***	-	3.55	-	**6.93**	1.2	<0.02	<0.02	0.37	5.30	<0.02	0.23	1.58	<0.05	<0.02	<0.02	-
MW235	26 Oct 2023	0207_MW235_231026	OMP Oct 2023	Normal	-	5.72	<0.02	-	0.24	***6.14***	-	3.84	-	**9.19**	1.6	<0.02	<0.02	0.36	6.75	<0.02	0.30	2.03	<0.05	<0.02	<0.02	-
MW235	04 Apr 2024	0207_MW235_240404	OMP Apr 2024	Normal	-	3.84	<0.02	-	0.18	***4.63***	-	2.83	-	**6.41**	1.2	<0.02	<0.02	0.33	6.14	<0.02	0.24	1.63	<0.05	<0.02	<0.02	-
MW235	10 Oct 2024	0207_MW235_241010	0207_PFASOMP_OCT_24	Normal	-	7.13	<0.05[#1]	-	<0.48[#1]	***3.39***	-	4.64	-	**9.81**	1.3	<0.05[#1]	<0.05[#1]	0.37	9.14	<0.05[#1]	0.29	2.03	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
MW236	23 Oct 2019	0207_MW236_191023	OMP Oct 2019	Normal	-	3.26	<0.02	-	0.60	***6.61***	-	2.62	-	**15.4**	0.8	<0.02	<0.02	0.54	4.66	<0.02	**1.00**	0.96	<0.05	<0.02	<0.02	-
MW236	01 Apr 2020	0207_MW236_200401	OMP Apr 2020	Normal	-	1.76	0.02	-	0.47	***4.98***	-	1.47	-	**7.17**	0.8	<0.02	<0.02	0.35	2.54	<0.02	**0.86**	0.58	<0.05	<0.02	<0.02	-
MW236	20 Oct 2020	0207_MW236_201020	OMP Oct 2020	Normal	-	3.43	<0.02	-	0.56	***6.29***	-	2.30	-	**8.96**	1.21	<0.02	<0.02	0.49	5.06	<0.02	**0.89**	1.15	<0.05	<0.02	<0.02	-
MW236	14 Apr 2021	0207_MW236_210414	OMP Apr 2021	Normal	-	3.56	<0.02	-	0.52	***5.08***	-	2.64	-	**9.33**	0.98	<0.02	<0.02	0.48	4.55	<0.02	**0.75**	1.09	<0.05	<0.02	<0.02	-
MW236	13 Oct 2021	0207_MW236_211013	OMP Oct 2021	Normal	-	3.36	<0.10[#1]	-	0.39	***3.78***	-	2.20	-	**7.57**	0.9	<0.10[#1]	<0.10[#1]	0.43	4.41	<0.10[#1]	**0.69**	1.10	<0.24[#1]	<0.10[#1]	<0.10[#1]	-
MW236	13 Oct 2021	0207_QC160_211013	OMP Oct 2021	Field_D	-	6.94	<0.02	-	0.48	***4.87***	-	7.24	-	**21.0**	2.0	<0.02	<0.02	1.25	13.4	<0.02	**1.06**	2.42	<0.06[#1]	<0.02	<0.02	-
MW236	13 Oct 2021	0207_QC260_21013	OMP Oct 2021	Interlab_D	<0.01	5.1	<0.01	-	0.26	***3.2***	-	4.4	<0.01	**15**	1.7	<0.01	<0.01	0.87	9	<0.01	**0.68**	2.2	<0.02	<0.02	<0.01	<0.02
MW236	20 Apr 2022	0207_MW236_220420	OMP Apr 2022	Normal	-	0.66	<0.02	-	<0.06[#1]	***0.96***	-	0.46	-	**1.84**	0.4	<0.02	<0.02	0.06	1.02	<0.02	0.23	0.31	<0.06[#1]	<0.02	<0.02	-
MW236	26 Oct 2022	0207_MW236_221026	OMP Oct 2022	Normal	-	1.36	<0.02	-	0.02	***0.26***	-	0.55	-	**1.16**	0.8	<0.02	<0.02	0.15	2.86	<0.02	0.17	0.83	<0.05	<0.02	<0.02	-
MW236	11 Apr 2023	0207_MW236_230411	OMP Apr 2023	Normal	-	1.38	<0.02	-	0.07	***0.84***	-	0.79	-	**2.38**	0.8	<0.02	<0.02	0.15	2.20	<0.02	0.22	0.65	<0.05	<0.02	<0.02	-
MW236	26 Oct 2023	0207_MW236_231026	OMP Oct 2023	Normal	-	2.11	<0.02	-	0.04	***0.40***	-	0.85	-	**2.22**	0.8	<0.02	<0.02	0.17	2.12	<0.02	0.24	0.82	<0.05	<0.02	<0.02	-
MW236	04 Apr 2024	0207_MW236_240404	OMP Apr 2024	Normal	-	1.64	<0.02	-	0.13	***0.84***	-	1.15	-	**4.18**	0.6	<0.02	<0.02	0.28	2.81	<0.02	0.38	0.65	<0.05	<0.02	<0.02	-
MW236	04 Apr 2024	0207_QC107_240404	OMP Apr 2024	Field_D	-	1.46	<0.02	-	0.11	***0.68***	-	1.21	-	**4.51**	0.6	<0.02	<0.02	0.25	2.85	<0.02	0.34	0.70	<0.05	<0.02	<0.02	-
MW236	04 Apr 2024	0207_QC207_240404	OMP Apr 2024	Interlab_D	<0.01	1.7	<0.01	-	0.045	***0.47***	-	1.1	<0.01	**2.5**	0.65	<0.01	<0.01	0.2	1.6	<0.01	0.25	0.57	<0.02	<0.02	<0.01	<0.02
MW236	10 Oct 2024	0207_MW236_241010	0207_PFASOMP_OCT_24	Normal	-	2.82	<0.05[#1]	-	<0.46[#1]	***4.63***	-	2.31	-	**12.4**	<2.3[#1]	<0.05[#1]	<0.05[#1]	0.46	4.40	<0.05[#1]	**0.83**	0.60	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
MW241	23 Oct 2019	0207_MW241_191023	OMP Oct 2019	Normal	-	0.19	<0.02	-	0.08	***2.90***	-	0.18	-	**1.53**	<0.1	<0.02	<0.02	0.06	0.26	<0.02	0.11	0.10	<0.05	<0.02	<0.02	-
MW241	01 Apr 2020	0207_MW241_200401	OMP Apr 2020	Normal	-	0.20	<0.02	-	0.12	***3.93***	-	0.19	-	**1.57**	0.1	<0.02	<0.02	0.07	0.25	<0.02	0.14	0.10	<0.05	<0.02	<0.02	-
MW241	20 Oct 2020	0207_MW241_201020	OMP Oct 2020	Normal	-	0.17	<0.02	-	0.09	***2.64***	-	0.16	-	**1.42**	<0.1	<0.02	<0.02	0.06	0.24	<0.02	0.13	0.08	<0.05	<0.02	<0.02	-
MW241	14 Apr 2021	0207_MW241_210414	OMP Apr 2021	Normal	-	0.13	<0.02	-	0.11	***3.77***	-	0.16	-	**1.44**	<0.1	<0.02	<0.02	0.06	0.21	<0.02	0.14	0.09	<0.05	<0.02	<0.02	-

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																					
MW241	13 Oct 2021	0207_MW241_211013	OMP Oct 2021	Normal	-	0.16	<0.02	-	0.15	***4.29***	-	0.21	-	**1.67**	0.1	<0.02	<0.02	0.07	0.25	<0.02	0.17	0.08	<0.05	<0.02	<0.02	-
MW241	19 Apr 2022	0207_MW241_220419	OMP Apr 2022	Normal	-	0.13	<0.02	-	0.07	***3.71***	-	0.15	-	**1.38**	<0.1	<0.02	<0.02	0.05	0.21	<0.02	0.11	0.06	<0.06[#1]	<0.02	<0.02	-
MW241	26 Oct 2022	0207_MW241_221026	OMP Oct 2022	Normal	-	0.18	<0.02	-	0.11	***6.84***	-	0.14	-	**1.18**	<0.1	<0.02	<0.02	0.05	0.23	<0.02	0.16	0.06	<0.05	<0.02	<0.02	-
MW241	11 Apr 2023	0207_MW241_230411	OMP Apr 2023	Normal	-	0.13	<0.02	-	0.11	***4.66***	-	0.14	-	**1.02**	<0.1	<0.02	<0.02	0.04	0.17	<0.02	0.11	0.07	<0.05	<0.02	<0.02	-
MW241	26 Oct 2023	0207_MW241_231026	OMP Oct 2023	Normal	-	0.15	<0.02	-	0.09	***4.00***	-	0.13	-	**1.10**	<0.1	<0.02	<0.02	0.04	0.14	<0.02	0.12	0.06	<0.05	<0.02	<0.02	-
MW241	04 Apr 2024	0207_MW241_240404	OMP Apr 2024	Normal	-	0.08	<0.02	-	0.08	***4.19***	-	0.09	-	**0.79**	<0.1	<0.02	<0.02	0.03	0.13	<0.02	0.09	0.04	<0.05	<0.02	<0.02	-
MW241	04 Apr 2024	0207_QC106_240404	OMP Apr 2024	Field_D	-	0.08	<0.02	-	0.10	***4.08***	-	0.09	-	**0.89**	<0.1	<0.02	<0.02	0.03	0.14	<0.02	0.09	0.05	<0.05	<0.02	<0.02	-
MW241	04 Apr 2024	0207_QC206_240404	OMP Apr 2024	Interlab_D	<0.01	0.086	<0.01	-	0.048	***2.4***	-	0.094	<0.01	**0.8**	0.051	<0.01	<0.01	0.022	0.11	<0.01	0.066	0.037	<0.02	<0.02	<0.01	<0.02
MW241	10 Oct 2024	0207_MW241_241010	0207_PFASOMP_OCT_24	Normal	-	<0.22[#1]	<0.02	-	0.06	***4.86***	-	0.14	-	**0.98**	<0.1	<0.02	<0.02	0.03	0.16	<0.02	0.08	0.06	<0.05	<0.02	<0.02	<0.05
MW242	22 Oct 2019	0207_MW242_191022	OMP Oct 2019	Normal	-	1.90	<0.02	-	0.56	***4.63***	-	2.02	-	**15.1**	0.3	<0.02	<0.02	0.52	3.36	<0.02	**0.95**	0.70	<0.05	<0.02	<0.02	-
MW242	26 Mar 2020	0207_MW242_200326	OMP Apr 2020	Normal	-	<0.09[#1]	<0.09[#1]	-	<0.09[#1]	***0.29***	-	<0.09[#1]	-	**0.19**	<0.5[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	0.14	<0.23[#1]	<0.09[#1]	<0.09[#1]	-
MW242	23 Oct 2020	0207_MW242_201023	OMP Oct 2020	Normal	-	0.03	<0.02	-	<0.02	***0.21***	-	<0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW242	20 Apr 2021	0207_MW242_210420	OMP Apr 2021	Normal	-	0.07	<0.02	-	0.03	***0.70***	-	0.08	-	**0.47**	<0.1	<0.02	<0.02	0.02	0.12	<0.02	0.04	0.04	<0.05	<0.02	<0.02	-
MW242	11 Oct 2021	0207_MW242_211011	OMP Oct 2021	Normal	-	0.10	<0.02	-	0.04	***0.75***	-	0.09	-	**0.59**	<0.1	<0.02	<0.02	0.02	0.16	<0.02	0.04	0.04	<0.05	<0.02	<0.02	-
MW242	18 Apr 2022	0207_MW242_220418	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	<0.02[#1]	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
MW242	25 Nov 2022	0207_MW242_221124	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW242	13 Apr 2023	0207_MW242_230413	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	*0.02*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW242	05 Apr 2024	0207_MW242_240405	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	23 Oct 2019	0207_MW245_191023	OMP Oct 2019	Normal	-	0.04	<0.02	-	<0.02	***0.10***	-	0.04	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	26 Mar 2020	0207_MW245_200326	OMP Apr 2020	Normal	-	0.04	<0.03[#1]	-	<0.03[#1]	***0.18***	-	0.04	-	**0.31**	<0.2[#1]	<0.03[#1]	<0.03[#1]	<0.03[#1]	0.06	<0.03[#1]	<0.03[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.03[#1]	-
MW245	20 Oct 2020	0207_MW245_201020	OMP Oct 2020	Normal	-	0.04	<0.02	-	<0.02	***0.13***	-	0.04	-	**0.22**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	20 Oct 2020	0207_QC133_201020	OMP Oct 2020	Field_D	-	0.04	<0.02	-	<0.02	***0.13***	-	0.04	-	**0.23**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	20 Oct 2020	0207_QC233_201020	OMP Oct 2020	Interlab_D	<0.01	0.028	<0.01	-	<0.01	***0.11***	-	0.027	<0.01	**0.19**	<0.05	<0.01	<0.01	<0.01	0.042	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW245	20 Apr 2021	0207_MW245_210420	OMP Apr 2021	Normal	-	0.03	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	11 Oct 2021	0207_MW245_211011	OMP Oct 2021	Normal	-	0.04	<0.02	-	<0.02	***0.14***	-	0.04	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	11 Oct 2021	0207_QC155_211011	OMP Oct 2021	Field_D	-	0.04	<0.02	-	<0.02	***0.13***	-	0.05	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	11 Oct 2021	0207_QC255_21011	OMP Oct 2021	Interlab_D	<0.01	0.031	<0.01	-	<0.01	***0.082***	-	0.031	<0.01	**0.19**	<0.05	<0.01	<0.01	<0.01	0.044	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW245	18 Apr 2022	0207_MW245_220418	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.02[#1]	<0.02	<0.06[#1]	<0.02	<0.02	-
MW245	18 Apr 2022	0207_QC108_220418	OMP Apr 2022	Field_D	-	0.03	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	18 Apr 2022	0207_QC208_220418	OMP Apr 2022	Interlab_D	<0.01	0.031	<0.01	-	<0.01	***0.38***	-	0.033	<0.01	**0.21**	<0.05	<0.01	<0.01	<0.01	0.046	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW245	03 Nov 2022	0207_MW245_221103	OMP Oct 2022	Normal	-	0.03	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.19**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	13 Apr 2023	0207_MW245_230413	OMP Apr 2023	Normal	-	0.05	<0.02	-	<0.02	***0.17***	-	0.05	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	26 Oct 2023	0207_MW245_231026	OMP Oct 2023	Normal	-	0.05	<0.02	-	<0.02	***0.12***	-	0.04	-	**0.21**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	05 Apr 2024	0207_MW245_240405	OMP Apr 2024	Normal	-	0.03	<0.02	-	<0.02	***0.08***	-	0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW245	08 Oct 2024	0207_MW245_241008	0207_PFASOMP_OCT_24	Normal	-	0.04	<0.02	-	<0.04[#]	***0.10***	-	<0.04[#1]	-	**0.20**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.06	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	<0.05
MW249	23 Oct 2019	0207_MW249_191023	OMP Oct 2019	Normal	-	0.60	<0.02	-	0.04	***0.09***	-	0.72	-	**3.12**	0.1	<0.02	<0.02	0.13	1.16	<0.02	0.07	0.30	<0.05	<0.02	<0.02	-
MW249	01 Apr 2020	0207_MW249_200401	OMP Apr 2020	Normal	-	0.82	<0.02	-	0.06	***0.12***	-	1.04	-	**3.92**	0.3	<0.02	<0.02	0.20	1.47	<0.02	0.11	0.42	<0.05	<0.02	<0.02	-
MW249	01 Apr 2020	0207_QC123_200401	OMP Apr 2020	Field_D	-	0.86	<0.02	-	0.06	***0.12***	-	0.98	-	**3.62**	0.3	<0.02	<0.02	0.20	1.52	<0.02	0.11	0.42	<0.05	<0.02	<0.02	-
MW249	01 Apr 2020	0207_QC223_200401	OMP Apr 2020	Interlab_D	<0.01	0.73	<0.01	-	0.025	*0.068*	-	0.74	<0.01	**2.9**	0.24	<0.01	<0.01	0.12	1.4	<0.01	0.077	0.39	<0.02	<0.02	<0.01	<0.02
MW249	20 Oct 2020	0207_MW249_201020	OMP Oct 2020	Normal	-	0.82	<0.02	-	0.05	***0.13***	-	0.93	-	**3.95**	0.2	<0.02	<0.02	0.17	1.62	<0.02	0.10	0.41	<0.05	<0.02	<0.02	-
MW249	14 Apr 2021	0207_MW249_210414	OMP Apr 2021	Normal	-	0.71	<0.02	-	0.06	***0.15***	-	0.94	-	**4.04**	0.2	<0.02	<0.02	0.17	1.41	<0.02	0.11	0.43	<0.05	<0.02	<0.02	-
MW249	13 Oct 2021	0207_MW249_211013	OMP Oct 2021	Normal	-	0.91	<0.02	-	0.08	***0.18***	-	1.03	-	**4.34**	0.3	<0.02	<0.02	0.21	1.82	<0.02	0.14	0.51	<0.05	<0.02	<0.02	-
MW249	19 Apr 2022	0207_MW249_220419	OMP Apr 2022	Normal	-	0.57	<0.02	-	<0.02	***0.11***	-	0.57	-	**2.58**	<0.1	<0.02	<0.02	0.11	0.99	<0.02	0.07	0.30	<0.06[#1]	<0.02	<0.02	-
MW249	19 Apr 2022	0207_QC111_220419	OMP Apr 2022	Field_D	-	0.49	<0.02	-	0.03	***0.11***	-	0.53	-	**2.52**	0.2	<0.02	<0.02	0.11	0.98	<0.02	0.08	0.27	<0.05	<0.02	<0.02	-
MW249	19 Apr 2022	0207_QC211_220419	OMP Apr 2022	Interlab_D	<0.01	0.48	<0.01	-	0.021	***0.082***	-	0.52	<0.01	**2.1**	0.22	<0.01	<0.01	0.09	0.84	<0.01	0.06	0.22	<0.02	<0.02	<0.01	<0.02

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																						
MW249	26 Oct 2022	0207_MW249_221026	OMP Oct 2022	Normal	-	0.65	<0.02	-	0.06	***0.17***	-	0.71	-	**3.22**	0.2	<0.02	<0.02	0.16	1.46	<0.02	0.09	0.37	<0.05	<0.02	<0.02	-
MW249	26 Oct 2022	0207_QC164_221026	OMP Oct 2022	Field_D	-	0.52	<0.02	-	0.04	***0.14***	-	0.56	-	**2.46**	0.2	<0.02	<0.02	0.13	1.01	<0.02	0.08	0.29	<0.05	<0.02	<0.02	-
MW249	26 Oct 2022	0207_QC264_221026	OMP Oct 2022	Interlab_D	-	0.44	<0.02	-	0.03	***0.12***	-	0.56	-	**2.43**	0.2	<0.02	<0.02	0.11	0.91	<0.02	0.07	0.28	<0.05	<0.02	<0.02	-
MW249	11 Apr 2023	0207_MW249_230411	OMP Apr 2023	Normal	-	0.96	<0.02	-	0.06	***0.19***	-	1.12	-	**4.22**	0.3	<0.02	<0.02	0.18	1.48	<0.02	0.12	0.49	<0.05	<0.02	<0.02	-
MW249	26 Oct 2023	0207_MW249_231026	OMP Oct 2023	Normal	-	0.91	<0.02	-	0.04	***0.16***	-	0.87	-	**3.45**	0.2	<0.02	<0.02	0.16	1.11	<0.02	0.12	0.45	<0.05	<0.02	<0.02	-
MW249	04 Apr 2024	0207_MW249_240404	OMP Apr 2024	Normal	-	0.68	<0.02	-	0.05	***0.19***	-	0.76	-	**3.33**	0.2	<0.02	<0.02	0.17	1.39	<0.02	0.11	0.44	<0.05	<0.02	<0.02	-
MW249	04 Apr 2024	0207_QC108_240404	OMP Apr 2024	Field_D	-	0.70	<0.02	-	0.05	***0.17***	-	0.92	-	**4.13**	0.2	<0.02	<0.02	0.19	1.54	<0.02	0.12	0.47	<0.05	<0.02	<0.02	-
MW249	04 Apr 2024	0207_QC208_240404	OMP Apr 2024	Interlab_D	<0.01	0.84	<0.01	-	0.025	***0.13***	-	0.85	<0.01	**2.6**	0.26	<0.01	<0.01	0.15	1.2	<0.01	0.079	0.36	<0.02	<0.02	<0.01	<0.02
MW249	10 Oct 2024	0207_MW249_241010	0207_PFASOMP_OCT_24	Normal	-	1.12	<0.02	-	0.05	***0.22***	-	1.12	-	**4.05**	0.4	<0.02	<0.02	0.19	1.61	<0.02	0.08	0.38	<0.05	<0.02	<0.02	<0.05
MW252	23 Oct 2019	0207_MW252_191023	OMP Oct 2019	Normal	-	1.65	<0.02	-	0.76	***26.3***	-	2.03	-	**13.2**	0.4	<0.02	<0.02	0.56	2.80	0.03	**1.02**	0.91	<0.05	<0.02	<0.02	-
MW252	01 Apr 2020	0207_MW252_200401	OMP Apr 2020	Normal	-	1.40	<0.02	-	1.07	***20.4***	-	1.99	-	**9.78**	0.5	<0.02	<0.02	0.56	2.14	0.03	**0.94**	0.74	<0.05	<0.02	<0.02	-
MW252	20 Oct 2020	0207_MW252_201020	OMP Oct 2020	Normal	-	1.16	<0.10[#1]	-	0.46	***16.3***	-	1.12	-	**6.55**	<0.50[#1]	<0.10[#1]	<0.10[#1]	0.38	1.55	<0.10[#1]	**0.68**	0.65	<0.25[#1]	<0.10[#1]	<0.10[#1]	-
MW252	14 Apr 2021	0207_MW252_210414	OMP Apr 2021	Normal	-	2.41	<0.10[#1]	-	0.64	***17.0***	-	2.70	-	**11.5**	0.83	<0.10[#1]	<0.10[#1]	0.76	3.43	<0.10[#1]	**0.97**	1.55	<0.25[#1]	<0.10[#1]	<0.10[#1]	-
MW252	13 Oct 2021	0207_MW252_211013	OMP Oct 2021	Normal	-	0.97	<0.02	-	0.47	***11.2***	-	1.21	-	**6.13**	0.3	<0.02	<0.02	0.31	1.22	0.02	0.53	0.51	<0.05	<0.02	<0.02	-
MW252	20 Apr 2022	0207_MW252_220420	OMP Apr 2022	Normal	-	0.30	<0.05[#1]	-	0.05	***4.20***	-	0.20	-	**1.25**	<0.2[#1]	<0.05[#1]	<0.05[#1]	0.07	0.37	<0.05[#1]	0.10	0.15	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW252	20 Apr 2022	0207_QC112_220420	OMP Apr 2022	Field_D	-	0.28	<0.02	-	0.08	***4.05***	-	0.24	-	**1.30**	0.1	<0.02	<0.02	0.08	0.34	<0.02	0.12	0.19	<0.05	<0.02	<0.02	-
MW252	20 Apr 2022	0207_QC212_220420	OMP Apr 2022	Interlab_D	<0.01	0.32	<0.01	-	0.051	***3.4***	-	0.25	<0.01	**1.3**	0.18	<0.01	<0.01	0.07	0.36	<0.01	0.12	0.16	<0.02	<0.02	<0.01	<0.02
MW252	26 Oct 2022	0207_MW252_221026	OMP Oct 2022	Normal	-	0.11	<0.02	-	0.03	***2.23***	-	0.08	-	**0.50**	<0.1	<0.02	<0.02	0.03	0.13	<0.02	0.03	0.06	<0.05	<0.02	<0.02	-
MW252	11 Apr 2023	0207_MW252_230411	OMP Apr 2023	Normal	-	0.55	<0.02	-	0.17	***9.06***	-	0.53	-	**2.20**	0.2	<0.02	<0.02	0.19	0.72	0.02	0.26	0.45	<0.05	<0.02	<0.02	-
MW252	26 Oct 2023	0207_MW252_231026	OMP Oct 2023	Normal	-	0.84	<0.02	-	0.12	***9.91***	-	0.52	-	**2.17**	0.3	<0.02	<0.02	0.21	0.65	0.02	0.36	0.50	<0.05	<0.02	<0.02	-
MW252	26 Oct 2023	0207_QC103_231026	OMP Oct 2023	Field_D	-	0.89	<0.02	-	0.23	***12.2***	-	0.72	-	**3.74**	0.4	<0.02	<0.02	0.22	1.08	0.03	0.48	0.78	<0.05	<0.02	<0.02	-
MW252	26 Oct 2023	0207_QC203_231026	OMP Oct 2023	Interlab_D	<0.01	0.73	<0.01	-	0.15	***8.7***	-	0.61	<0.01	**2.5**	0.37	<0.01	<0.01	0.27	0.92	0.024	0.35	0.58	<0.02	<0.02	<0.01	<0.02
MW252	04 Apr 2024	0207_MW252_240404	OMP Apr 2024	Normal	-	0.79	<0.02	-	0.20	***11.3***	-	0.74	-	**3.33**	0.4	<0.02	<0.02	0.33	1.18	0.03	0.45	0.75	<0.05	<0.02	<0.02	-
MW252	04 Apr 2024	0207_QC105_240404	OMP Apr 2024	Field_D	-	0.71	<0.02	-	0.25	***11.5***	-	0.86	-	**4.43**	0.3	<0.02	<0.02	0.35	1.37	0.03	0.45	0.77	<0.05	<0.02	<0.02	-
MW252	04 Apr 2024	0207_QC205_240404	OMP Apr 2024	Interlab_D	<0.01	0.84	<0.01	-	0.16	***7.8***	-	0.77	<0.01	**3.1**	0.41	<0.01	<0.01	0.31	1.1	0.023	0.41	0.67	<0.02	<0.02	<0.01	<0.02
MW252	10 Oct 2024	0207_MW252_241010	0207_PFASOMP_OCT_24	Normal	-	2.48	<0.09[#1]	-	<0.88[#1]	***49.5***	-	2.12	-	**11.1**	<4.4[#1]	<0.09[#1]	<0.09[#1]	<0.88[#1]	3.27	<0.88[#1]	**<0.88[#1]**	1.15	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.22[#1]
MW255	23 Oct 2019	0207_MW255_191023	OMP Oct 2019	Normal	-	0.02	<0.02	-	<0.02	***0.04***	-	0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	26 Mar 2020	0207_MW255_200326	OMP Apr 2020	Normal	-	0.02	<0.02	-	<0.02	***0.06***	-	0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	21 Oct 2020	0207_MW255_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	***0.07***	-	0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	13 Apr 2021	0207_MW255_210413	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	***0.04***	-	0.02	-	**0.11**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	13 Apr 2021	0207_QC142_210413	OMP Apr 2021	Field_D	-	<0.02	<0.02	-	<0.02	***0.04***	-	0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	13 Apr 2021	0207_QC242_210413	OMP Apr 2021	Interlab_D	<0.01	0.02	<0.01	-	<0.01	***0.042***	-	0.019	<0.01	**0.11**	<0.05	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW255	15 Oct 2021	0207_MW255_211015	OMP Oct 2021	Normal	-	0.03	<0.02	-	<0.02	***0.07***	-	0.03	-	**0.15**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	15 Apr 2022	0207_MW255_220415	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	***0.02***	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	26 Oct 2023	0207_MW255_231026	OMP Oct 2023	Normal	-	0.03	<0.02	-	<0.02	***0.10***	-	0.03	-	**0.19**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW255	10 Apr 2024	0207_MW255_240410	OMP Apr 2024	Normal	-	0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.13**	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	23 Oct 2019	0207_MW257_191023	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	***0.17***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	26 Mar 2020	0207_MW257_200326	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	***0.23***	-	<0.02	-	**0.18**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	26 Mar 2020	0207_QC117_200326	OMP Apr 2020	Field_D	-	<0.02	<0.02	-	<0.02	***0.27***	-	<0.02	-	**0.20**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	26 Mar 2020	0207_QC217_200326	OMP Apr 2020	Interlab_D	<0.01	0.012	<0.01	-	<0.01	***0.18***	-	0.012	<0.01	**0.17**	<0.05	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW257	21 Oct 2020	0207_MW257_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	***0.03***	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	17 Apr 2021	0207_MW257_210417	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	14 Oct 2021	0207_MW257_211014	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	15 Apr 2022	0207_MW257_220415	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.03*[#1]	-	<0.02	-	0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	27 Oct 2022	0207_MW257_221027	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	***0.11***	-	<0.02	-	**0.12**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-

Appendix B
Table 3
Historical Analytical Results

		PFAS	PFAS - Perfluoroalkyl Sulfonic Acids										PFAS - Perfluoroalkyl Carboxylic Acids											
			FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR			0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems								*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water								**0.07**				**0.07**							**0.56**					
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																				
MW257	14 Apr 2023	0207_MW257_230414	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	**0.14**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	26 Oct 2023	0207_MW257_231026	OMP Oct 2023	Normal	-	<0.04[#1]	<0.02	-	<0.02	***0.09***	-	<0.02	-	**<0.11[#1]**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	10 Apr 2024	0207_MW257_240410	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	***0.11***	-	<0.02	-	**0.09**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW257	09 Oct 2024	0207_MW257_241009	0207_PFASOMP_OCT_24	Normal	-	<0.05[#1]	<0.02	-	<0.02	***0.13***	-	<0.02	-	**0.10**	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW262	21 Oct 2019	0207_MW262_191024	OMP Oct 2019	Normal	-	0.04	<0.02	-	<0.02	***0.19***	-	0.04	-	**0.27**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	24 Mar 2020	0207_MW262_200323	OMP Apr 2020	Normal	-	0.05	<0.02	-	<0.02	***0.34***	-	0.04	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	21 Oct 2020	0207_MW262_201021	OMP Oct 2020	Normal	-	0.07	<0.02	-	<0.02	***0.06***	-	0.02	-	**0.13**	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW262	19 Apr 2021	0207_MW262_210419	OMP Apr 2021	Normal	-	0.05	<0.02	-	0.02	***0.26***	-	0.04	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	19 Apr 2021	0207_QC154_210419	OMP Apr 2021	Field_D	-	0.05	<0.02	-	<0.02	***0.28***	-	0.04	-	**0.25**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	19 Apr 2021	0207_QC254_210419	OMP Apr 2021	Interlab_D	<0.01	0.049	<0.01	-	0.013	***0.2***	-	0.039	<0.01	**0.23**	<0.05	<0.01	<0.01	0.013	0.038	<0.01	0.022	<0.02	<0.02	<0.02	<0.01	<0.02
MW262	14 Oct 2021	0207_MW262_211014	OMP Oct 2021	Normal	-	0.05	<0.02	-	<0.02	***0.18***	-	0.05	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	16 Apr 2022	0207_MW262_220416	OMP Apr 2022	Normal	-	0.05	<0.02	-	<0.02	***0.27***	-	0.04	-	**0.26**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.03	<0.02	<0.05	<0.02	<0.02	-
MW262	02 Nov 2022	0207_MW262_221102	OMP Oct 2022	Normal	-	0.08	<0.02	-	<0.02	***0.14***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	14 Apr 2023	0207_MW262_230414	OMP Apr 2023	Normal	-	0.09	<0.02	-	0.03	***0.34***	-	0.06	-	**0.37**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW262	26 Oct 2023	0207_MW262_231026	OMP Oct 2023	Normal	-	0.08	<0.02	-	<0.02	***0.23***	-	0.06	-	**0.32**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	-
MW262	11 Apr 2024	0207_MW262_240411	OMP Apr 2024	Normal	-	0.05	<0.02	-	<0.02	***0.16***	-	0.04	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW262	09 Oct 2024	0207_MW262_241009	0207_PFASOMP_OCT_24	Normal	-	0.10	<0.02	-	0.03	***0.38***	-	0.07	-	**0.36**	<0.1	<0.02	<0.02	0.02	0.07	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05
MW269	25 Oct 2019	0207_MW269_191025	OMP Oct 2019	Normal	-	<0.02	<0.02	-	<0.02	***0.07***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	25 Mar 2020	0207_MW269_200325	OMP Apr 2020	Normal	-	<0.02	<0.02	-	<0.02	***0.07***	-	<0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.16[#1]	<0.05	<0.02	<0.02	-
MW269	21 Oct 2020	0207_MW269_201021	OMP Oct 2020	Normal	-	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	15 Apr 2021	0207_MW269_210415	OMP Apr 2021	Normal	-	<0.02	<0.02	-	<0.02	***0.10***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	15 Oct 2021	0207_MW269_211015	OMP Oct 2021	Normal	-	<0.02	<0.02	-	<0.02	***0.08***	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	13 Apr 2022	0207_MW269_220413	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	02 Nov 2022	0207_MW269_221102	OMP Oct 2022	Normal	-	<0.02	<0.02	-	<0.02	*0.06*	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	18 Apr 2023	0207_MW269_230418	OMP Apr 2023	Normal	-	<0.02	<0.02	-	<0.02	*<0.01*	-	<0.02	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	25 Oct 2023	0207_MW269_231025	OMP Oct 2023	Normal	-	<0.02	<0.02	-	<0.02	*0.05*	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	08 Apr 2024	0207_MW269_240408	OMP Apr 2024	Normal	-	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW269	09 Oct 2024	0207_MW269_241009	0207_PFASOMP_OCT_24	Normal	-	<0.02	<0.02	-	<0.02	*0.04*	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05
MW272	23 Oct 2019	0207_MW272_191023	OMP Oct 2019	Normal	-	0.06	<0.02	-	<0.02	***0.10***	-	0.06	-	**0.39**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	26 Mar 2020	0207_MW272_200326	OMP Apr 2020	Normal	-	0.06	<0.02	-	<0.02	***0.16***	-	0.08	-	**0.42**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	21 Oct 2020	0207_MW272_201021	OMP Oct 2020	Normal	-	0.07	<0.02	-	<0.02	***0.21***	-	0.07	-	**0.44**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	21 Oct 2020	0207_QC135_201021	OMP Oct 2020	Field_D	-	0.07	<0.02	-	<0.02	***0.19***	-	0.08	-	**0.46**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	21 Oct 2020	0207_QC235_201021	OMP Oct 2020	Interlab_D	<0.01	0.051	<0.01	-	<0.01	***0.14***	-	0.05	<0.01	**0.37**	<0.05	<0.01	<0.01	<0.01	0.078	<0.01	0.011	0.02	<0.02	<0.02	<0.01	<0.02
MW272	19 Apr 2021	0207_MW272_210419	OMP Apr 2021	Normal	-	0.08	<0.02	-	<0.02	***0.16***	-	0.08	-	**0.42**	<0.10	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.03	<0.05	<0.02	<0.02	-
MW272	15 Oct 2021	0207_MW272_211015	OMP Oct 2021	Normal	-	0.09	<0.02	-	0.02	***0.21***	-	0.10	-	**0.55**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	15 Apr 2022	0207_QC105_220416	OMP Apr 2022	Field_D	-	0.04	<0.02	-	<0.02	***0.13***	-	0.04	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	16 Apr 2022	0207_MW272_220416	OMP Apr 2022	Normal	-	0.04	<0.02	-	<0.02	***0.10***	-	0.04	-	**0.24**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	16 Apr 2022	0207_QC205_220416	OMP Apr 2022	Interlab_D	<0.01	0.038	<0.01	-	<0.01	*0.065*	-	0.04	<0.01	**0.25**	<0.05	<0.01	<0.01	0.011	0.07	<0.01	<0.01	0.026	<0.02	<0.02	<0.01	<0.02
MW272	27 Oct 2022	0207_MW272_221027	OMP Oct 2022	Normal	-	0.05	<0.02	-	<0.02	***0.11***	-	0.05	-	**0.28**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	13 Apr 2023	0207_MW272_230413	OMP Apr 2023	Normal	-	0.08	<0.02	-	<0.02	***0.17***	-	0.08	-	**0.42**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	0.02	<0.05	<0.02	<0.02	-
MW272	13 Apr 2023	0207_QC107_230413	OMP Apr 2023	Field_D	-	0.09	<0.02	-	0.02	***0.18***	-	0.10	-	**0.46**	<0.1	<0.02	<0.02	<0.02	0.11	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW272	13 Apr 2023	0207_QC207_230413	OMP Apr 2023	Interlab_D	<0.01	0.054	<0.01	-	<0.01	***0.11***	-	0.064	<0.01	**0.39**	<0.05	<0.01	<0.01	<0.01	0.077	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02
MW272	26 Oct 2023	0207_MW272_231026	OMP Oct 2023	Normal	-	0.07	<0.02	-	<0.02	***0.16***	-	0.06	-	**0.38**	<0.1	<0.02	<0.02	<0.02	0.07	<0.02	0.02	<0.02	<0.05	<0.02	<0.02	-
MW272	08 Apr 2024	0207_MW272_240408	OMP Apr 2024	Normal	-	0.05	<0.02	-	<0.02	***0.11***	-	0.06	-	**0.33**	<0.1	<0.02	<0.02	<0.02	0.08	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW272	09 Oct 2024	0207_MW272_241009	0207_PFASOMP_OCT_24	Normal	-	0.07	<0.02	-	<0.02	***0.14***	-	0.08	-	**0.44**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.02	0.02	<0.05	<0.02	<0.02	<0.05

					PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids										
					FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems										*0.00023*											*19*				
PFAS NEMP 2.0 2020 Health Drinking Water										**0.07**				**0.07**							**0.56**				
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																						
MW276	23 Oct 2019	0207_MW276_191023	OMP Oct 2019	Normal	-	0.84	<0.02	-	0.48	***9.26***	-	1.07	-	**8.54**	0.2	<0.02	<0.02	0.25	1.58	<0.02	0.52	0.32	<0.05	<0.02	<0.02	-
MW276	23 Mar 2020	0207_QC118_200323	OMP Apr 2020	Field_D	-	1.09	<0.04[#1]	-	0.73	***12.7***	-	1.45	-	**9.23**	<0.2[#1]	<0.04[#1]	<0.04[#1]	0.27	1.65	<0.04[#1]	**0.61**	0.32	<0.10[#1]	<0.04[#1]	<0.04[#1]	-
MW276	26 Mar 2020	0207_MW276_200326	OMP Apr 2020	Normal	-	1.24	<0.02	-	1.04	***12.7***	-	1.52	-	**8.05**	0.3	<0.02	<0.02	0.35	2.24	<0.02	**0.69**	0.41	<0.05	<0.02	<0.02	-
MW276	26 Mar 2020	0207_QC218_200326	OMP Apr 2020	Interlab_D	<0.01	0.90	<0.01	-	0.43	***8.7***	-	0.90	<0.01	**7.5**	0.35	<0.01	<0.01	0.25	1.6	<0.01	**0.56**	0.36	<0.02	<0.02	<0.01	<0.02
MW276	21 Oct 2020	0207_MW276_201021	OMP Oct 2020	Normal	-	0.96	<0.02	-	0.63	***10.9***	-	1.16	-	**8.90**	0.35	<0.02	<0.02	0.29	1.78	<0.02	**0.56**	0.38	<0.05	<0.02	<0.02	-
MW276	19 Apr 2021	0207_MW276_210419	OMP Apr 2021	Normal	-	0.83	<0.02	-	0.66	***11.5***	-	1.17	-	**8.05**	0.3	<0.02	<0.02	0.26	1.57	<0.02	**0.57**	0.35	<0.05	<0.02	<0.02	-
MW276	19 Apr 2021	0207_QC153_210419	OMP Apr 2021	Field_D	-	1.01	<0.05[#1]	-	0.63	***13.5***	-	1.33	-	**9.08**	0.4	<0.05[#1]	<0.05[#1]	0.30	1.91	<0.05[#1]	**0.66**	0.41	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW276	19 Apr 2021	0207_QC253_210419	OMP Apr 2021	Interlab_D	<0.01	0.84	<0.01	-	0.4	***7.8***	-	0.84	<0.01	**6.3**	0.27	<0.01	<0.01	0.2	1.2	<0.01	0.42	0.29	<0.02	<0.02	<0.01	<0.02
MW276	14 Oct 2021	0207_MW276_211014	OMP Oct 2021	Normal	-	1.09	<0.02	-	0.71	***11.6***	-	1.38	-	**8.98**	0.4	<0.02	<0.02	0.34	1.94	<0.02	**0.68**	0.47	<0.06[#1]	<0.02	<0.02	-
MW276	15 Apr 2022	0207_MW276_220415	OMP Apr 2022	Normal	-	0.83	<0.02	-	0.60	***11.2***	-	1.00	-	**7.78**	0.3	<0.02	<0.02	0.25	1.67	<0.02	0.55	0.34	<0.05	<0.02	<0.02	-
MW276	24 Nov 2022	0207_MW276_221124	OMP Oct 2022	Normal	-	0.82	<0.02	-	0.51	***9.39***	-	1.12	-	**7.16**	0.2	<0.02	<0.02	0.22	1.65	<0.02	0.54	0.32	<0.05	<0.02	<0.02	-
MW276	13 Apr 2023	0207_MW276_230413	OMP Apr 2023	Normal	-	1.03	<0.02	-	0.67	***10.4***	-	1.19	-	**8.05**	0.3	<0.02	<0.02	0.28	1.72	<0.02	**0.57**	0.35	<0.06[#1]	<0.02	<0.02	-
MW276	26 Oct 2023	0207_MW276_231026	OMP Oct 2023	Normal	-	0.93	<0.02	-	0.51	***11.7***	-	0.98	-	**7.69**	0.3	<0.02	<0.02	0.23	1.27	<0.02	**0.61**	0.34	<0.05	<0.02	<0.02	-
MW276	11 Apr 2024	0207_MW276_240411	OMP Apr 2024	Normal	-	0.52	<0.02	-	0.37	***9.22***	-	0.71	-	**5.91**	0.2	<0.02	<0.02	0.18	1.17	<0.02	0.38	0.24	<0.05	<0.02	<0.02	-
MW276	09 Oct 2024	0207_MW276_241009	0207_PFASOMP_OCT_24	Normal	-	0.83	<0.05[#1]	-	0.34	***9.10***	-	0.90	-	**6.42**	0.3	<0.05[#1]	<0.05[#1]	0.22	1.32	<0.05[#1]	0.46	0.28	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
MW299	23 Oct 2019	0207_MW299_191023	OMP Oct 2019	Normal	-	1.79	<0.02	-	0.06	***0.34***	-	2.70	-	**7.36**	1.1	<0.02	<0.02	0.48	3.02	<0.02	0.40	0.74	<0.05	<0.02	<0.02	-
MW299	30 Oct 2019	0207_MWS1-B_191030	OMP Oct 2019	Normal	-	3.93	<0.0005	-	0.610	***7.47***	-	3.07	-	**12.7**	0.392	<0.0005	<0.0005	1.30	8.22	0.0030	**2.00**	1.77	<0.0005	<0.0005	<0.0005	-
MW299	30 Oct 2019	0207_QC1mw_191030	OMP Oct 2019	Field_D	-	4.02	<0.0005	-	0.656	***8.01***	-	3.31	-	**13.1**	0.563	<0.0005	<0.0005	1.36	9.52	0.0030	**2.25**	1.90	<0.0005	<0.0005	<0.0005	-
MW299	26 Mar 2020	0207_MW299_200326	OMP Apr 2020	Normal	-	4.18	<0.06[#1]	-	0.66	***11.6***	-	4.25	-	**15.6**	0.5	<0.06[#1]	<0.06[#1]	1.75	8.98	<0.06[#1]	**2.30**	2.05	<0.16[#1]	<0.06[#1]	<0.06[#1]	-
MW299	20 Oct 2020	0207_MW299_201020	OMP Oct 2020	Normal	-	4.27	<0.07[#1]	-	0.84	***8.94***	-	4.66	-	**17.5**	1.5	<0.07[#1]	<0.07[#1]	2.04	10.7	<0.07[#1]	**3.10**	2.28	<0.18[#1]	<0.07[#1]	<0.07[#1]	-
MW299	17 Apr 2021	0207_MW299_210417	OMP Apr 2021	Normal	-	4.04	<0.21[#1]	-	0.61	***10.7***	-	4.09	-	**13.7**	1.5	<0.21[#1]	<0.21[#1]	1.73	8.36	<0.21[#1]	**2.38**	2.08	<0.53[#1]	<0.21[#1]	<0.21[#1]	-
MW299	12 Oct 2021	0207_MW299_211012	OMP Oct 2021	Normal	-	7.50	<0.02	-	1.73	***15.4***	-	7.16	-	**31.3**	2.4	<0.02	<0.02	3.92	18.6	<0.02	**6.39**	4.27	<0.06[#1]	<0.02	<0.02	-
MW299	17 Apr 2022	0207_MW299_220417	OMP Apr 2022	Normal	-	17.7	<0.24[#1]	-	5.41	***88.5***	-	16.9	-	**80.8**	5.5	<0.24[#1]	<0.24[#1]	10.4	49.6	<0.24[#1]	***22.9***	10.6	<0.61[#1]	<0.24[#1]	<0.24[#1]	-
MW299	26 Oct 2022	0207_MW299_221026	OMP Oct 2022	Normal	-	17.6	<0.10[#1]	-	6.41	***107***	-	12.8	-	**70.3**	4.8	<0.10[#1]	<0.10[#1]	11.9	51.1	<0.10[#1]	***21.6***	9.32	<0.24[#1]	<0.10[#1]	<0.10[#1]	-
MW299	12 Apr 2023	0207_MW299_230412	OMP Apr 2023	Normal	-	10.1	<0.44[#1]	-	6.07	***234***	-	8.56	-	**43.3**	3.4	<0.44[#1]	<0.44[#1]	6.07	28.4	<0.44[#1]	**15.2**	6.07	<1.09[#1]	<0.44[#1]	<0.44[#1]	-
MW299	24 Oct 2023	0207_MW299_231024	OMP Oct 2023	Normal	-	17.6	<0.10[#1]	-	4.30	***91.7***	-	15.0	-	**71.4**	5.7	<0.10[#1]	<0.10[#1]	9.01	37.3	<0.10[#1]	**18.6**	10.3	<0.24[#1]	<0.10[#1]	<0.10[#1]	-
MW299	10 Oct 2024	0207_MW299_241010	0207_PFASOMP_OCT_24	Normal	-	4.20	<0.05[#1]	-	<0.49[#]	***12.1***	-	3.32	-	**11.7**	0.8	<0.05[#1]	<0.05[#1]	1.41	6.98	<0.05[#1]	**1.70**	1.44	<0.12[#1]	<0.05[#1]	<0.05[#1]	<0.12[#1]
MW300	23 Oct 2019	0207_MW300_191023	OMP Oct 2019	Normal	-	16.6	<0.02	-	2.81	***28.7***	-	15.8	-	**52.2**	3.4	<0.02	<0.02	5.04	28.8	0.03	**7.26**	6.50	<0.05	<0.02	<0.02	-
MW300	30 Oct 2019	0207_MWS1-D_191030	OMP Oct 2019	Normal	-	1.49	<0.0005	-	0.280	***3.33***	-	1.18	-	**4.48**	0.159	0.0008	<0.0005	0.368	2.77	0.0108	**0.671**	0.576	<0.0005	<0.0005	<0.0005	-
MW300	24 Mar 2020	0207_MW300_200324	OMP Apr 2020	Normal	-	16.1	<0.19[#1]	-	4.07	***40.6***	-	14.5	-	**50.0**	3.3	<0.19[#1]	<0.19[#1]	5.24	27.2	<0.19[#1]	**7.33**	6.16	<0.48[#1]	<0.19[#1]	<0.19[#1]	-
MW300	20 Oct 2020	0207_MW300_201020	OMP Oct 2020	Normal	-	11.2	<0.18[#1]	-	3.98	***45.6***	-	11.9	-	**48.2**	3.4	<0.18[#1]	<0.18[#1]	4.87	24.1	<0.18[#1]	**8.02**	5.16	<0.44[#1]	<0.18[#1]	<0.18[#1]	-
MW300	23 Mar 2021	0207_MWS1-D_210323	OMP Apr 2021	Normal	-	7.14	<0.07[#1]	-	2.96	***31.0***	-	7.53	-	**37.1**	2.8	<0.07[#1]	<0.07[#1]	3.41	18.7	<0.07[#1]	**6.58**	3.92	<0.18[#1]	<0.07[#1]	<0.07[#1]	-
MW300	17 Apr 2021	0207_MW300_210417	OMP Apr 2021	Normal	-	9.74	<0.10[#1]	-	4.37	***59.8***	-	10.3	-	**47.8**	3.46	<0.10[#1]	<0.10[#1]	4.29	19.1	<0.10[#1]	**8.36**	4.59	<0.25[#1]	<0.10[#1]	<0.10[#1]	-
MW300	17 Apr 2021	0207_QC151_210417	OMP Apr 2021	Field_D	-	8.93	<0.08[#1]	-	4.00	***63.3***	-	9.83	-	**42.4**	3.0	<0.08[#1]	<0.08[#1]	4.12	18.4	<0.08[#1]	**8.83**	4.42	<0.21[#1]	<0.08[#1]	<0.08[#1]	-
MW300	17 Apr 2021	0207_QC251_210417	OMP Apr 2021	Interlab_D	<0.01	7.3	<0.01	-	2	***37***	-	6.1	<0.01	**34**	2.5	<0.01	<0.01	2.6	12	0.013	**5.1**	2.9	<0.02	<0.02	<0.01	<0.02
MW300	12 Oct 2021	0207_MW300_211012	OMP Oct 2021	Normal	-	9.58	<0.05[#1]	-	4.27	***44.1***	-	9.84	-	**42.9**	3.5	<0.05[#1]	<0.05[#1]	4.48	19.3	<0.05[#1]	**8.59**	4.75	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW300	17 Apr 2022	0207_MW300_220417	OMP Apr 2022	Normal	-	4.94	<0.27[#1]	-	4.14	***83.6***	-	5.35	-	**36.6**	1.4	<0.27[#1]	<0.27[#1]	2.89	12.4	<0.27[#1]	**9.03**	2.81	<0.68[#1]	<0.27[#1]	<0.27[#1]	-
MW300	26 Oct 2022	0207_MW300_221026	OMP Oct 2022	Normal	-	5.28	<0.10[#1]	-	3.86	***70.2***	-	5.14	-	**30.4**	1.8	<0.10[#1]	<0.10[#1]	3.06	11.8	<0.10[#1]	**8.56**	2.76	<0.24[#1]	<0.10[#1]	<0.10[#1]	-
MW300	12 Apr 2023	0207_MW300_230412	OMP Apr 2023	Normal	-	6.39	<0.10[#1]	-	4.78	***63.1***	-	6.58	-	**30.9**	1.9	<0.10[#1]	<0.10[#1]	2.90	12.0	<0.10[#1]	**7.72**	2.89	<0.24[#1]	<0.10[#1]	<0.10[#1]	-
MW300	24 Oct 2023	0207_MW300_231024	OMP Oct 2023	Normal	-	6.37	<0.02	-	3.90	***59.5***	-	6.34	-	**32.0**	2.1	<0.02	<0.04[#1]	2.53	11.0	<0.02	**7.52**	3.06	<0.06[#1]	<0.02	<0.02	-
MW300	10 Oct 2024	0207_MW300_241010	0207_PFASOMP_OCT_24	Normal	-	3.90	<0.09[#1]	-	2.82	***43.9***	-	4.43	-	**24.4**	1.2	<0.09[#1]	<0.09[#1]	1.69	7.84	<0.09[#1]	**4.40**	2.05	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.22[#1]
MW562	20 Apr 2022	0207_MW562_220420	OMP Apr 2022	Normal	-	3.30	<0.02	-	<0.14[#]	***0.61***	-	2.37	-	**8.81**	0.9	<0.02	<0.02	0.43	4.49	<0.02	0.55	1.57	<0.06[#1]	<0.02	<0.02	-
MW562	03 Nov 2022	0207_MW562_221103	OMP Oct 2022	Normal	-	2.72	<0.02	-	0.19	***0.39***	-	2.66	-	**14.4**	0.7	<0.02	<0.02	0.68	4.69	<0.02	**0.74**	1.19	<0.06[#1]	<0.02	<0.02	-

Appendix B
Table 3
Historical Analytical Results

		PFAS	PFAS - Perfluoroalkyl Sulfonic Acids									PFAS - Perfluoroalkyl Carboxylic Acids											
		FOUEA (2H-Perfluoro-2-decenoic acid (8:2))	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR		0.01	0.0005	0.0005	0.01	0.0005	0.0003	0.01	0.0005	0.01	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.02
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems							*0.00023*											*19*					
PFAS NEMP 2.0 2020 Health Drinking Water							**0.07**				**0.07**							**0.56**					
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW562	12 Apr 2023	0207_MW562_230412	OMP Apr 2023	Normal	-	0.09	<0.02	-	<0.02	***0.03***	-	0.06	-	**0.17**	0.1	<0.02	<0.02	<0.02	0.13	<0.02	0.02	0.15	<0.05	<0.02	<0.02	-
MW562	26 Oct 2023	0207_MW562_231026	OMP Oct 2023	Normal	-	0.11	<0.02	-	<0.02	*<0.04*[#1]	-	0.06	-	**0.21**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.03	0.14	<0.05	<0.02	<0.02	-
MW562	04 Apr 2024	0207_MW562_240404	OMP Apr 2024	Normal	-	0.06	<0.02	-	<0.02	***0.04***	-	0.05	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.02	0.09	<0.05	<0.02	<0.02	-
MW562	10 Oct 2024	0207_MW562_241010	0207_PFASOMP_OCT_24	Normal	-	4.69	<0.09[#1]	-	<0.93[#1]	***1.20***	-	4.48	-	**22.0**	1.1	<0.09[#1]	<0.09[#1]	0.85	6.06	<0.09[#1]	**1.07**	1.71	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.23[#1]
MW563	20 Apr 2022	0207_MW563_220420	OMP Apr 2022	Normal	-	<0.02	<0.02	-	<0.02	*<0.02*[#1]	-	<0.02	-	<0.07[#1]	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<0.02[#1]	0.22	<0.06[#1]	<0.02	<0.02	-
MW563	03 Nov 2022	0207_MW563_221103	OMP Oct 2022	Normal	-	0.05	<0.02	-	<0.02	***0.01***	-	0.04	-	**0.10**	<0.1	<0.02	<0.02	<0.02	0.09	<0.02	0.01	0.18	<0.05	<0.02	<0.02	-
MW563	12 Apr 2023	0207_MW563_230412	OMP Apr 2023	Normal	-	2.90	<0.05[#1]	-	0.29	***0.50***	-	3.21	-	**16.2**	0.7	<0.05[#1]	<0.05[#1]	0.66	4.37	<0.05[#1]	**0.74**	1.10	<0.12[#1]	<0.05[#1]	<0.05[#1]	-
MW563	26 Oct 2023	0207_MW563_231026	OMP Oct 2023	Normal	-	2.75	<0.02	-	0.27	***1.06***	-	2.96	-	**18.3**	0.6	<0.02	<0.02	0.63	3.54	<0.02	**0.88**	1.09	<0.06[#1]	<0.02	<0.02	-
MW563	26 Oct 2023	0207_QC104_231026	OMP Oct 2023	Field_D	-	2.70	<0.02	-	0.30	***0.99***	-	3.25	-	**19.6**	0.7	<0.02	<0.02	0.65	3.66	<0.02	**0.91**	1.20	<0.06[#1]	<0.02	<0.02	-
MW563	26 Oct 2023	0207_QC204_231026	OMP Oct 2023	Interlab_D	<0.01	1.6	<0.01	-	0.18	***0.64***	-	1.9	<0.01	**13**	0.7	<0.01	<0.01	0.58	2.4	<0.01	**0.68**	0.95	<0.02	<0.02	<0.01	<0.02
MW563	04 Apr 2024	0207_MW563_240404	OMP Apr 2024	Normal	-	2.26	<0.02	-	0.25	***0.71***	-	2.57	-	**15.9**	0.6	<0.02	<0.02	0.72	4.15	<0.02	**0.82**	1.02	<0.05	<0.02	<0.02	-
MW563	04 Apr 2024	0207_QC109_240404	OMP Apr 2024	Field_D	-	2.16	<0.02	-	0.24	***0.62***	-	2.57	-	**16.4**	0.6	<0.02	<0.02	0.66	4.06	<0.02	**0.72**	1.00	<0.05	<0.02	<0.02	-
MW563	04 Apr 2024	0207_QC209_240404	OMP Apr 2024	Interlab_D	<0.01	1.9	<0.01	-	0.19	***0.48***	-	2.1	<0.01	**14**	0.64	<0.01	<0.01	0.57	2.3	<0.01	**0.6**	0.88	<0.02	<0.02	<0.01	<0.02
MW563	10 Oct 2024	0207_MW563_241010	0207_PFASOMP_OCT_24	Normal	-	0.13	<0.02	-	<0.04[#1]	*0.05*	-	0.08	-	**0.27**	<0.1	<0.02	<0.02	<0.02	0.19	<0.02	0.03	0.10	<0.05	<0.02	<0.02	<0.05
MW568	08 Oct 2024	0207_MW568_241008	0207_PFASOMP_OCT_24	Normal	-	<0.03[#1]	<0.02	-	<0.02	*<0.02*[#1]	-	<0.02	-	<0.03[#1]	<0.1	<0.02	<0.02	<0.04[#1]	0.14	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	-
MW569	10 Oct 2024	0207_MW569_241010	0207_PFASOMP_OCT_24	Normal	-	0.46	<0.02	-	<0.04[#1]	***0.08***	-	0.17	-	**0.36**	<0.1	<0.02	<0.02	0.10	0.63	<0.02	0.16	0.15	<0.05	<0.02	<0.02	-
MW570D	10 Oct 2024	0207_MW570_D_241010	0207_PFASOMP_OCT_24	Normal	-	0.05	<0.02	-	<0.04[#1]	***0.29***	-	0.04	-	**0.40**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.09	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	-
MW570S	10 Oct 2024	0207_MW570_S_241010	0207_PFASOMP_OCT_24	Normal	-	0.06	<0.02	-	0.02	***0.25***	-	0.07	-	**0.45**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.06	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	-
MW570S	10 Oct 2024	0207_QC106_241010	0207_PFASOMP_OCT_24	Field_D	-	0.07	<0.02	-	<0.04[#1]	***0.35***	-	0.08	-	**0.43**	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-
MW570S	10 Oct 2024	0207_QC206_241010	0207_PFASOMP_OCT_24	Interlab_D	-	0.11	<0.01	<0.01	0.06[#2]	***0.44***[#2]	0.04	0.11[#2]	-	**0.78**[#2]	<0.05	<0.01	<0.01	0.03[#2]	0.20	<0.01	0.04[#2]	0.04	<0.01	<0.01	<0.01	-
MW571D	10 Oct 2024	0207_MW571_D_241010	0207_PFASOMP_OCT_24	Normal	-	0.20	<0.02	-	0.07	***1.23***	-	0.17	-	**1.05**	<0.1	<0.02	<0.02	0.06	0.30	<0.02	0.10	0.09	<0.05	<0.02	<0.02	-
MW571S	10 Oct 2024	0207_MW571_S_241010	0207_PFASOMP_OCT_24	Normal	-	0.38	<0.02	-	0.20	***2.78***	-	0.38	-	**2.49**	<0.2[#1]	<0.02	<0.02	0.08	0.55	<0.02	0.14	0.08	<0.05	<0.02	<0.02	-
MW572D	10 Oct 2024	0207_MW572_D_241010	0207_PFASOMP_OCT_24	Normal	-	0.74	<0.02	-	0.23	***2.65***	-	0.74	-	**2.92**	0.2	<0.02	<0.02	0.19	1.14	<0.02	0.27	0.28	<0.05	<0.02	<0.02	-
MW572S	10 Oct 2024	0207_MW572_S_241010	0207_PFASOMP_OCT_24	Normal	-	0.78	<0.02	-	0.15	***2.46***	-	0.65	-	**3.30**	0.2	<0.02	<0.02	0.21	1.28	<0.02	0.28	0.31	<0.05	<0.02	<0.02	-
MW573D	10 Oct 2024	0207_MW573_D_241010	0207_PFASOMP_OCT_24	Normal	-	0.71	<0.02	-	0.17	***2.60***	-	0.62	-	**3.14**	0.4	<0.02	<0.02	0.21	1.18	<0.02	0.28	0.29	<0.05	<0.02	<0.02	-
MW573S	10 Oct 2024	0207_MW573_S_241010	0207_PFASOMP_OCT_24	Normal	-	0.80	<0.02	-	0.24	***2.83***	-	0.82	-	**3.53**	<0.2[#1]	<0.02	<0.02	0.22	1.21	<0.04[#1]	0.27	0.32	<0.05	<0.02	<0.02	-
MW574D	08 Oct 2024	0207_MW574_D_241008	0207_PFASOMP_OCT_24	Normal	-	0.09	<0.02	-	<0.02	***0.16***	-	0.08	-	**0.43**	<0.2[#1]	<0.02	<0.02	<0.04[#1]	0.09	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	-
MW574S	08 Oct 2024	0207_MW574_S_241008	0207_PFASOMP_OCT_24	Normal	-	0.10	<0.02	-	<0.04[#1]	***0.18***	-	0.08	-	**0.41**	<0.1	<0.02	<0.02	<0.02	0.14	<0.02	0.02	0.04	<0.05	<0.02	<0.02	-
MW575	10 Oct 2024	0207_MW575_241010	0207_PFASOMP_OCT_24	Normal	-	0.47	<0.02	-	0.18	***2.22***	-	0.42	-	**2.56**	<0.1	<0.02	<0.02	0.11	0.66	<0.02	0.16	0.17	<0.05	<0.02	<0.02	-
MW575	10 Oct 2024	0207_QC105_241010	0207_PFASOMP_OCT_24	Field_D	-	0.46	<0.02	-	0.18	***2.25***	-	0.48	-	**2.72**	<0.2[#1]	<0.02	<0.02	0.11	0.65	<0.02	0.16	0.17	<0.05	<0.02	<0.02	-
MW575	10 Oct 2024	0207_QC205_241010	0207_PFASOMP_OCT_24	Interlab_D	-	0.44	<0.01	<0.01	0.11[#2]	***2.4***[#2]	0.18	0.42[#2]	-	**2.3**[#2]	0.12	<0.01	<0.01	0.10[#2]	0.79	<0.01	0.14[#2]	0.19	<0.01	<0.01	<0.01	-
MW576	10 Oct 2024	0207_MW576_241010	0207_PFASOMP_OCT_24	Normal	-	<0.04[#1]	<0.02	-	<0.04[#1]	***0.23***	-	<0.04[#1]	-	**0.17**	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-
MW577	10 Oct 2024	0207_MW577_241010	0207_PFASOMP_OCT_24	Normal	-	<0.04[#1]	<0.02	-	<0.04[#1]	*<0.04*[#1]	-	<0.04[#1]	-	<0.04[#1]	<0.1	<0.02	<0.02	<0.04[#1]	<0.04[#1]	<0.02	<0.04[#1]	<0.04[#1]	<0.05	<0.02	<0.02	-
MW578	08 Oct 2024	0207_MW578_241008	0207_PFASOMP_OCT_24	Normal	-	0.05	<0.02	-	<0.04[#1]	***0.24***	-	0.05	-	**0.20**	<0.1	<0.02	<0.02	<0.02	0.05	<0.02	0.01	<0.02	<0.05	<0.02	<0.02	-

Comments
#1 Reported Analyte LOR is higher than Requested Analyte LOR
#2 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#3 The LORs have been raised due to matrix interference
Locations where new maximums were recorded

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW003	24 Oct 2019	0207_MW003_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	24 Mar 2020	0207_MW003_200324	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	24 Mar 2020	0207_QC115_200324	OMP Apr 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	24 Mar 2020	0207_QC215_200324	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW003	21 Oct 2020	0207_MW003_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	13 Apr 2021	0207_MW003_210413	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	14 Oct 2021	0207_MW003_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	13 Apr 2022	0207_MW003_220413	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	02 Nov 2022	0207_MW003_221102	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	02 Nov 2022	0207_QC167_221102	OMP Oct 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	02 Nov 2022	0207_QC267_221102	OMP Oct 2022	Interlab_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	18 Apr 2023	0207_MW003_230418	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	25 Oct 2023	0207_MW003_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	08 Apr 2024	0207_MW003_240408	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW003	09 Oct 2024	0207_MW003_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW019	24 Oct 2019	0207_MW019_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW019	26 Mar 2020	0207_MW019_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW019	21 Oct 2020	0207_MW019_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW019	13 Apr 2021	0207_MW019_210413	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW019	14 Oct 2021	0207_MW019_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	**0.07**	-	-	-
MW019	12 Apr 2022	0207_MW019_220412	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW019	27 Oct 2022	0207_MW019_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	0.13	-	-	**0.13**	-	-	-
MW019	27 Oct 2022	0207_QC166_221027	OMP Oct 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW019	27 Oct 2022	0207_QC266_221027	OMP Oct 2022	Interlab_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW019	17 Apr 2023	0207_MW019_230417	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	-	**0.12**	-	-	-
MW019	25 Oct 2023	0207_MW019_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW019	09 Apr 2024	0207_MW019_240409	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	**0.07**	-	-	-
MW019	09 Oct 2024	0207_MW019_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	-	0.07	-	**0.07**	-	-	-
MW038	24 Oct 2019	0207_MW038_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.57	0.54	-	-	**0.45**	-	-	-
MW038	26 Mar 2020	0207_MW038_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.05	0.98	-	-	**0.85**	-	-	-
MW038	21 Oct 2020	0207_MW038_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.68	0.65	-	-	**0.56**	-	-	-
MW038	15 Apr 2021	0207_MW038_210415	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	0.85	-	-	**0.72**	-	-	-
MW038	15 Oct 2021	0207_MW038_211015	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	1.11	-	-	**0.94**	-	-	-
MW038	03 Nov 2022	0207_MW038_221103	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.18	1.10	-	-	**0.93**	-	-	-
MW038	13 Apr 2023	0207_MW038_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.34	1.25	-	-	**1.07**	-	-	-
MW038	27 Oct 2023	0207_MW038_231027	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.53	1.45	-	-	**1.24**	-	-	-
MW038	08 Apr 2024	0207_MW038_240408	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.95	0.91	-	-	**0.80**	-	-	-
MW038	01 Oct 2024	0207_MW038_241001	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	-	1.18	-	**1.03**	-	-	-
MW038	01 Oct 2024	0207_QC101_241001	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.20	-	1.13	-	**0.98**	-	-	-
MW038	01 Oct 2024	0207_QC201_241001	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.27	-	1.19	-	**1.03**	-	-	-
MW056	23 Oct 2020	0207_MW056_201023	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	0.42	-	-	**0.31**	-	-	-
MW056	13 Apr 2021	0207_MW056_210413	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.66	0.62	-	-	**0.45**	-	-	-
MW056	14 Oct 2021	0207_MW056_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.62	0.59	-	-	**0.43**	-	-	-
MW056	12 Apr 2022	0207_MW056_220412	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.41	0.37	-	-	**0.27**	-	-	-
MW056	27 Oct 2022	0207_MW056_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.61	0.57	-	-	**0.42**	-	-	-
MW056	17 Apr 2023	0207_MW056_230417	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.56	0.52	-	-	**0.40**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW056	25 Oct 2023	0207_MW056_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.46	0.44	-	-	**0.35**	-	-	-
MW056	09 Apr 2024	0207_MW056_240409	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.29	0.29	-	-	**0.23**	-	-	-
MW134	24 Oct 2019	0207_MW134_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	-	**0.12**	-	-	-
MW134	26 Mar 2020	0207_MW134_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW134	21 Oct 2020	0207_MW134_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW134	19 Apr 2021	0207_MW134_210419	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-	0.04	-	-	-
MW134	14 Oct 2021	0207_MW134_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.34	0.32	-	-	**0.27**	-	-	-
MW134	14 Apr 2022	0207_MW134_220414	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.24	-	-	**0.22**	-	-	-
MW134	02 Nov 2022	0207_MW134_221102	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW134	19 Apr 2023	0207_MW134_230419	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	0.11	-	-	**0.09**	-	-	-
MW134	25 Oct 2023	0207_MW134_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.26	-	-	**0.26**	-	-	-
MW134	10 Apr 2024	0207_MW134_240410	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	-	0.05	-	-	-
MW134	09 Oct 2024	0207_MW134_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	-	0.20	-	**0.20**	-	-	-
MW147	24 Oct 2019	0207_MW147_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	27 Mar 2020	0207_MW147_200327	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	21 Oct 2020	0207_MW147_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	13 Apr 2021	0207_MW147_210413	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	14 Oct 2021	0207_MW147_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-	<0.01	-	-	-
MW147	12 Apr 2022	0207_MW147_220412	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	17 Apr 2023	0207_MW147_230417	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	25 Oct 2023	0207_MW147_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	09 Apr 2024	0207_MW147_240409	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW147	11 Oct 2024	0207_MW147_241011	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW151	24 Oct 2019	0207_MW151_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	27 Mar 2020	0207_MW151_200327	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	21 Oct 2020	0207_MW151_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	13 Apr 2021	0207_MW151_210413	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	14 Oct 2021	0207_MW151_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	14 Apr 2022	0207_MW151_220414	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	27 Oct 2022	0207_MW151_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW151	17 Apr 2023	0207_MW151_230417	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW151	25 Oct 2023	0207_MW151_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW151	09 Apr 2024	0207_MW151_240409	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW151	11 Oct 2024	0207_MW151_241011	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	-	0.05	-	0.05	-	-	-
MW167	21 Oct 2019	0207_MW167_191021	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	15.0	14.0	-	-	**10.5**	-	-	-
MW167	30 Oct 2019	0207_MWA1-B_191030	OMP Oct 2019	Normal	<0.001	0.0007	<0.001	<0.001	<0.0005	<0.001	0.0139	<0.001	<0.001	0.019	0.002	17.4	16.3	-	-	**12.7**	-	-	-
MW167	25 Mar 2020	0207_MW167_200325	OMP Apr 2020	Normal	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	18.2	16.9	-	-	**13.5**	-	-	-
MW167	19 Oct 2020	0207_MW167_201019	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	17.3	16.2	-	-	**12.1**	-	-	-
MW167	23 Mar 2021	0207_MWA1-B_210323	OMP Apr 2021	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	20.6	19.5	-	-	**15.5**	-	-	-
MW167	17 Apr 2021	0207_MW167_210417	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	12.0	11.2	-	-	**8.23**	-	-	-
MW167	11 Oct 2021	0207_MW167_211011	OMP Oct 2021	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	12.4	11.4	-	-	**8.04**	-	-	-
MW167	17 Apr 2022	0207_MW167_220417	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	10.1	9.44	-	-	**6.82**	-	-	-
MW167	27 Oct 2022	0207_MW167_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.0	10.4	-	-	**8.17**	-	-	-
MW167	12 Apr 2023	0207_MW167_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.0	12.0	-	-	**8.62**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW167	12 Apr 2023	0207_QC103_230412	OMP Apr 2023	Field_D	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	14.5	13.3	-	-	**9.65**	-	-	-
MW167	12 Apr 2023	0207_QC203_230412	OMP Apr 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW167	24 Oct 2023	0207_MW167_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.7	10.8	-	-	**7.97**	-	-	-
MW167	09 Oct 2024	0207_MW167_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	11.0	-	10.2	-	**7.37**	-	-	-
MW172	23 Oct 2019	0207_MW172_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	1.00	1.49	16.7	15.9	-	-	**7.52**	-	-	-
MW172	20 Oct 2020	0207_MW172_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.86	1.42	14.4	13.7	-	-	**6.01**	-	-	-
MW172	14 Apr 2021	0207_MW172_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.89	1.53	14.3	13.7	-	-	**5.34**	-	-	-
MW172	14 Apr 2021	0207_QC145_210414	OMP Apr 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.86	0.86	13.6	12.9	-	-	**4.56**	-	-	-
MW172	14 Apr 2021	0207_QC245_210414	OMP Apr 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.82	0.94	-	-	-	-	-	-	<0.02	<0.05
MW172	13 Oct 2021	0207_MW172_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.42	0.24	8.29	7.85	-	-	**3.70**	-	-	-
MW172	17 Apr 2022	0207_MW172_220417	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	7.07	1.94	49.2	47.6	-	-	**26.7**	-	-	-
MW172	26 Oct 2022	0207_MW172_221026	OMP Oct 2022	Normal	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	6.22	3.04	49.3	47.6	-	-	**24.1**	-	-	-
MW172	26 Oct 2022	0207_QC165_221026	OMP Oct 2022	Field_D	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	5.06	1.84	42.9	41.4	-	-	**21.6**	-	-	-
MW172	26 Oct 2022	0207_QC265_221026	OMP Oct 2022	Interlab_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	4.68	2.71	43.3	41.4	-	-	**22.1**	-	-	-
MW172	12 Apr 2023	0207_MW172_230412	OMP Apr 2023	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	3.30	0.99	36.2	34.6	-	-	**17.8**	-	-	-
MW172	24 Oct 2023	0207_MW172_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	2.40	0.84	35.7	34.2	-	-	**18.6**	-	-	-
MW172	10 Oct 2024	0207_MW172_241010	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	1.49	0.29	21.0	-	20.1	-	**8.63**	-	-	-
MW173	23 Oct 2019	0207_MW173_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	1.40	0.12	15.1	14.2	-	-	**7.03**	-	-	-
MW173	26 Mar 2020	0207_MW173_200326	OMP Apr 2020	Normal	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.05	<0.05	1.01	<0.05	12.2	11.4	-	-	**5.92**	-	-	-
MW173	26 Mar 2020	0207_QC121_200326	OMP Apr 2020	Field_D	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.05	<0.05	1.07	<0.05	12.7	12.0	-	-	**6.17**	-	-	-
MW173	26 Mar 2020	0207_QC221_200326	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	1.1	0.036	-	-	-	-	-	-	<0.02	<0.05
MW173	20 Oct 2020	0207_MW173_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.54	<0.05	10.0	9.46	-	-	**4.94**	-	-	-
MW173	20 Oct 2020	0207_QC132_201020	OMP Oct 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.42	<0.05	8.49	7.89	-	-	**4.75**	-	-	-
MW173	20 Oct 2020	0207_QC232_201020	OMP Oct 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.34	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW173	14 Apr 2021	0207_MW173_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.23	<0.05	8.43	7.93	-	-	**4.33**	-	-	-
MW173	13 Oct 2021	0207_MW173_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.76	<0.05	10.5	9.84	-	-	**5.00**	-	-	-
MW173	17 Apr 2022	0207_MW173_220417	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.66	<0.05	10.0	9.48	-	-	**5.27**	-	-	-
MW173	24 Oct 2022	0207_MW173_221024	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.43	<0.05	10.1	9.47	-	-	**4.76**	-	-	-
MW173	12 Apr 2023	0207_MW173_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.27	<0.05	10.4	9.69	-	-	**4.80**	-	-	-
MW173	24 Oct 2023	0207_MW173_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.15	<0.05	9.95	9.33	-	-	**4.51**	-	-	-
MW173	24 Oct 2023	0207_QC100_231024	OMP Oct 2023	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.31	<0.05	10.4	9.69	-	-	**4.88**	-	-	-
MW173	24 Oct 2023	0207_QC200_231024	OMP Oct 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.036	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW173	10 Oct 2024	0207_MW173_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.71	<0.05	17.2	-	16.1	-	**8.04**	-	-	-
MW173	10 Oct 2024	0207_QC104_241010	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.74	<0.05	12.6	-	11.7	-	**5.60**	-	-	-
MW173	10 Oct 2024	0207_QC204_241010	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	0.65	0.02	13.03	-	12.19	3.26	**5.9**	6.46	-	-
MW174	22 Oct 2019	0207_MW174_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-	0.01	-	-	-
MW174	22 Oct 2019	0207_QC100_191022	OMP Oct 2019	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW174	22 Oct 2019	0207_QC200_191022	OMP Oct 2019	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.015	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW174	29 Oct 2019	0207_MWA4-A_191029	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	0.410	<0.001	1.03	0.993	-	-	**0.145**	-	-	-
MW174	26 Mar 2020	0207_MW174_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.52	<0.05	0.76	0.76	-	-	**0.16**	-	-	-
MW174	19 Oct 2020	0207_MW174_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.94	<0.05	1.45	1.43	-	-	**0.18**	-	-	-
MW174	14 Apr 2021	0207_MW174_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.72	<0.05	1.05	1.05	-	-	**0.11**	-	-	-
MW174	13 Oct 2021	0207_MW174_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.16	<0.05	0.98	0.98	-	-	**0.16**	-	-	-
MW174	17 Apr 2022	0207_MW174_220417	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	0.06	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW174	02 Nov 2022	0207_MW174_221102	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	0.22	-	-	0.06	-	-	-
MW174	13 Apr 2023	0207_MW174_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.13	0.13	-	-	0.06	-	-	-
MW174	24 Oct 2023	0207_MW174_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	0.04	-	-	-
MW174	03 Apr 2024	0207_MW174_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW174	03 Apr 2024	0207_QC101_240403	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-	0.03	-	-	-
MW174	03 Apr 2024	0207_QC201_240403	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW174	09 Oct 2024	0207_MW174_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.09	<0.05	0.15	-	0.15	-	0.06	-	-	-
MW178	23 Oct 2019	0207_MW178_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	29 Oct 2019	0207_MWA4-B-UA_191029	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	0.010	<0.001	0.0208	0.0194	-	-	0.0094	-	-	-
MW178	26 Mar 2020	0207_MW178_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.13	<0.05	0.15	0.15	-	-	0.02	-	-	-
MW178	19 Oct 2020	0207_MW178_201019	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	19 Oct 2020	0207_QC131_201019	OMP Oct 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	24 Mar 2021	0207_MWA4-B-UA_210324	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	24 Mar 2021	0207_QC102_210324	OMP Apr 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	24 Mar 2021	0207_QC202_210324	OMP Apr 2021	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.1	<0.05	-	<0.02	<0.02	<0.02	-	-
MW178	17 Apr 2021	0207_MW178_210417	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	11 Oct 2021	0207_MW178_211011	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	17 Apr 2022	0207_MW178_220417	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	02 Nov 2022	0207_MW178_221102	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	13 Apr 2023	0207_MW178_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	24 Oct 2023	0207_MW178_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	03 Apr 2024	0207_MW178_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW178	09 Oct 2024	0207_MW178_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW178	09 Oct 2024	0207_QC103_241009	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01	-	-	-
MW178	09 Oct 2024	0207_QC203_241009	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.1	-	<0.05	<0.01	0.01	0.01	-	-
MW179	06 Nov 2019	0207_MW179_191106	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	6.71	6.13	-	-	**3.86**	-	-	-
MW179	23 Mar 2020	0207_MW179_200323	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.03	8.34	-	-	**5.28**	-	-	-
MW179	23 Mar 2020	0207_QC114_200323	OMP Apr 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.87	6.34	-	-	**3.99**	-	-	-
MW179	23 Mar 2020	0207_QC214_200323	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW179	20 Oct 2020	0207_MW179_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.03	8.37	-	-	**5.31**	-	-	-
MW179	16 Apr 2021	0207_MW179_210416	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.56	8.79	-	-	**5.65**	-	-	-
MW179	16 Apr 2021	0207_QC150_210416	OMP Apr 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.89	9.12	-	-	**5.88**	-	-	-
MW179	16 Apr 2021	0207_QC250_210416	OMP Apr 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW179	11 Oct 2021	0207_MW179_211011	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.0	10.1	-	-	**6.65**	-	-	-
MW179	18 Apr 2022	0207_MW179_220418	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	8.40	7.74	-	-	**4.72**	-	-	-
MW179	03 Nov 2022	0207_MW179_221103	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.09	<0.05	12.1	11.3	-	-	**6.95**	-	-	-
MW179	13 Apr 2023	0207_MW179_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.07	<0.05	9.90	9.08	-	-	**5.25**	-	-	-
MW179	24 Oct 2023	0207_MW179_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	10.1	9.35	-	-	**6.25**	-	-	-
MW179	03 Apr 2024	0207_MW179_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.51	6.88	-	-	**4.51**	-	-	-
MW179	09 Oct 2024	0207_MW179_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.10	-	8.43	-	**5.58**	-	-	-
MW187	22 Oct 2019	0207_MW187_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.35	1.24	-	-	**1.02**	-	-	-
MW187	29 Oct 2019	0207_MWB5-A_191029	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	0.002	<0.001	1.43	1.29	-	-	**0.942**	-	-	-
MW187	25 Mar 2020	0207_MW187_200325	OMP Apr 2020	Normal	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	1.31	1.22	-	-	**1.11**	-	-	-
MW187	25 Mar 2020	0207_QC216_200325	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW187	20 Oct 2020	0207_MW187_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.27	1.16	-	-	**0.94**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW187	17 Apr 2021	0207_MW187_210417	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.25	1.14	-	-	**0.89**	-	-	-
MW187	13 Oct 2021	0207_MW187_211013	OMP Oct 2021	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	1.23	1.16	-	-	**1.04**	-	-	-
MW187	11 Apr 2022	0207_MW187_220411	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.13	1.11	-	-	**0.61**	-	-	-
MW187	27 Oct 2022	0207_MW187_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.03	0.97	-	-	**0.73**	-	-	-
MW187	13 Apr 2023	0207_MW187_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.15	1.06	-	-	**0.87**	-	-	-
MW187	26 Oct 2023	0207_MW187_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	0.79	-	-	**0.68**	-	-	-
MW187	03 Apr 2024	0207_MW187_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.64	0.60	-	-	**0.51**	-	-	-
MW189	22 Oct 2019	0207_MW189_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	0.15	-	-	**0.15**	-	-	-
MW189	29 Oct 2019	0207_MWB5-B_191029	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.001	0.257	0.238	-	-	**0.195**	-	-	-
MW189	25 Mar 2020	0207_MW189_200325	OMP Apr 2020	Normal	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.05	<0.05	<0.05	<0.05	0.16	0.16	-	-	**0.16**	-	-	-
MW189	20 Oct 2020	0207_MW189_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	-	**0.20**	-	-	-
MW189	17 Apr 2021	0207_MW189_210417	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	-	**0.20**	-	-	-
MW189	13 Oct 2021	0207_MW189_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.19	0.19	-	-	**0.19**	-	-	-
MW189	11 Apr 2022	0207_MW189_220411	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	0.15	-	-	**0.15**	-	-	-
MW189	27 Oct 2022	0207_MW189_221027	OMP Oct 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	0.15	0.15	-	-	**0.13**	-	-	-
MW189	13 Apr 2023	0207_MW189_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.24	-	-	**0.22**	-	-	-
MW189	13 Apr 2023	0207_QC106_230413	OMP Apr 2023	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.25	0.23	-	-	**0.21**	-	-	-
MW189	13 Apr 2023	0207_QC206_230413	OMP Apr 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW189	26 Oct 2023	0207_MW189_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.18	-	-	**0.18**	-	-	-
MW189	03 Apr 2024	0207_MW189_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.11	0.11	-	-	**0.11**	-	-	-
MW189	09 Oct 2024	0207_MW189_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.14	<0.05	0.37	-	0.35	-	**0.19**	-	-	-
MW193	23 Oct 2019	0207_MW193_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.14	<0.05	75.6	70.1	-	-	**43.1**	-	-	-
MW193	30 Oct 2019	0207_MWC1-C_191030	OMP Oct 2019	Normal	<0.025[#1]	<0.0100[#1]	<0.025[#1]	<0.025[#1]	<0.0100[#1]	<0.025[#1]	<0.0100[#1]	<0.010[#1]	<0.010[#1]	0.183	0.036	72.9	65.8	-	-	**39.8**	-	-	-
MW193	30 Oct 2019	0207_MWC1-H_191030	OMP Oct 2019	Normal	<0.025[#1]	<0.0100[#1]	<0.025[#1]	<0.025[#1]	<0.0100[#1]	<0.025[#1]	0.0260	<0.010[#1]	<0.010[#1]	0.256	0.014	57.5	54.4	-	-	**42.9**	-	-	-
MW193	25 Mar 2020	0207_MW193_200325	OMP Apr 2020	Normal	<0.40[#1]	<0.16[#1]	<0.40[#1]	<0.40[#1]	<0.16[#1]	<0.40[#1]	<0.16[#1]	<0.16[#1]	<0.16[#1]	0.18	<0.16[#1]	75.0	69.1	-	-	**44.5**	-	-	-
MW193	20 Oct 2020	0207_MW193_201020	OMP Oct 2020	Normal	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	0.13	<0.07[#1]	64.4	59.3	-	-	**34.4**	-	-	-
MW193	20 Oct 2020	0207_QC134_201020	OMP Oct 2020	Field_D	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	0.14	<0.05	68.0	62.5	-	-	**38.8**	-	-	-
MW193	20 Oct 2020	0207_QC234_201020	OMP Oct 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.13	0.037	-	-	-	-	-	-	<0.02	<0.05
MW193	24 Mar 2021	0207_MWC1-C_210224	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.15	0.05	65.6	59.8	-	-	**34.3**	-	-	-
MW193	14 Apr 2021	0207_MW193_210414	OMP Apr 2021	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	0.14	<0.05	76.0	69.9	-	-	**42.9**	-	-	-
MW193	11 Oct 2021	0207_MW193_211011	OMP Oct 2021	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.14	<0.05	81.5	74.7	-	-	**45.4**	-	-	-
MW193	17 Apr 2022	0207_MW193_220417	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.07	<0.05	59.5	55.3	-	-	**31.5**	-	-	-
MW193	26 Oct 2022	0207_MW193_221026	OMP Oct 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	45.6	42.6	-	-	**24.3**	-	-	-
MW193	12 Apr 2023	0207_MW193_230412	OMP Apr 2023	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	45.4	41.7	-	-	**24.1**	-	-	-
MW193	24 Oct 2023	0207_MW193_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.81	<0.05	35.4	32.8	-	-	**19.6**	-	-	-
MW193	10 Oct 2024	0207_MW193_241010	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.06	<0.05	52.4	-	48.7	-	**25.5**	-	-	-
MW198	22 Oct 2019	0207_MW198_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	<0.05	0.22	<0.05	53.1	50.5	-	-	**40.2**	-	-	-
MW198	25 Mar 2020	0207_MW198_200325	OMP Apr 2020	Normal	<0.40[#1]	<0.16[#1]	<0.40[#1]	<0.40[#1]	<0.16[#1]	<0.40[#1]	<0.16[#1]	<0.16[#1]	<0.16[#1]	0.19	<0.16[#1]	48.1	45.6	-	-	**37.5**	-	-	-
MW198	19 Oct 2020	0207_MW198_201019	OMP Oct 2020	Normal	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.04[#1]	<0.05	<0.05	0.10	<0.05	25.0	23.8	-	-	**18.5**	-	-	-
MW198	14 Apr 2021	0207_MW198_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.25	7.89	-	-	**6.68**	-	-	-
MW198	11 Oct 2021	0207_MW198_211011	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.1	10.5	-	-	**8.73**	-	-	-
MW198	17 Apr 2022	0207_MW198_220417	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.66	9.21	-	-	**7.55**	-	-	-
MW198	25 Oct 2022	0207_QC263_221025	OMP Oct 2022	Interlab_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.07	<0.05	28.8	27.5	-	-	**22.4**	-	-	-
MW198	04 Nov 2022	0207_MW198_221025	OMP Oct 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.09	<0.05	33.2	31.6	-	-	**25.1**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW198	04 Nov 2022	0207_QC163_221025	OMP Oct 2022	Field_D	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.10	<0.05	31.6	30.0	-	-	**23.6**	-	-	-
MW198	12 Apr 2023	0207_MW198_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.30	5.99	-	-	**5.30**	-	-	-
MW198	24 Oct 2023	0207_MW198_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.67	7.40	-	-	**6.89**	-	-	-
MW198	10 Oct 2024	0207_MW198_241010	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.07	<0.05	24.3	-	23.0	-	**18.2**	-	-	-
MW201	22 Oct 2019	0207_MW201_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	<0.05	0.78	<0.05	498	430	-	-	**325**	-	-	-
MW201	22 Oct 2019	0207_QC103_191022	OMP Oct 2019	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	<0.05	0.80	<0.05	451	409	-	-	**306**	-	-	-
MW201	22 Oct 2019	0207_QC203_191022	OMP Oct 2019	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.69	0.011	-	-	-	-	-	-	<0.02	<0.05
MW201	30 Oct 2019	0207_MW201_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0101	<0.001	<0.001	0.196	0.001	58.9	54.0	-	-	**39.1**	-	-	-
MW201	26 Mar 2020	0207_MW201_200326	OMP Apr 2020	Normal	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	0.48	<0.07[#1]	118	107	-	-	**81.7**	-	-	-
MW201	23 Oct 2020	0207_MW201_201023	OMP Oct 2020	Normal	<0.47[#1]	<0.19[#1]	<0.47[#1]	<0.47[#1]	<0.19[#1]	<0.47[#1]	<0.19[#1]	<0.19[#1]	<0.19[#1]	0.41	<0.19[#1]	157	142	-	-	**105**	-	-	-
MW201	15 Apr 2021	0207_MW201_210415	OMP Apr 2021	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	0.43	<0.05	162	143	-	-	**101**	-	-	-
MW201	12 Oct 2021	0207_MW201_211012	OMP Oct 2021	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.44	<0.10[#1]	183	163	-	-	**117**	-	-	-
MW201	17 Apr 2022	0207_MW201_220417	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.46	<0.05	249	225	-	-	**162**	-	-	-
MW201	17 Apr 2022	0207_QC107_220417	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.61	<0.05	202	184	-	-	**136**	-	-	-
MW201	17 Apr 2022	0207_QC207_220417	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.5	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW201	04 Nov 2022	0207_MW201_221025	OMP Oct 2022	Normal	<0.60[#1]	<0.24[#1]	<0.60[#1]	<0.60[#1]	<0.24[#1]	<0.60[#1]	<0.24[#1]	<0.24[#1]	<0.24[#1]	0.55	<0.24[#1]	348	310	-	-	**210**	-	-	-
MW201	12 Apr 2023	0207_MW201_230412	OMP Apr 2023	Normal	<0.58[#1]	<0.23[#1]	<0.58[#1]	<0.58[#1]	<0.23[#1]	<0.58[#1]	<0.23[#1]	<0.23[#1]	<0.23[#1]	0.42	<0.23[#1]	350	308	-	-	**186**	-	-	-
MW201	25 Oct 2023	0207_MW201_231025	OMP Oct 2023	Normal	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	0.74	<0.09[#1]	228	201	-	-	**139**	-	-	-
MW201	25 Oct 2023	0207_QC101_231025	OMP Oct 2023	Field_D	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	0.86	<0.09[#1]	226	201	-	-	**134**	-	-	-
MW201	25 Oct 2023	0207_QC201_231025	OMP Oct 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.56	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW201	09 Oct 2024	0207_MW201_241009	0207_PFASOMP_OCT_24	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.51	<0.10[#1]	149	-	132	-	**88.9**	-	-	-
MW202	22 Oct 2019	0207_MW202_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.20	<0.05	63.2	56.9	-	-	**41.6**	-	-	-
MW202	30 Oct 2019	0207_MW202_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0214	<0.001	0.004	0.682	0.013	435	397	-	-	**292**	-	-	-
MW202	23 Oct 2020	0207_MW202_201023	OMP Oct 2020	Normal	<1.00[#1]	<0.40[#1]	<1.00[#1]	<1.00[#1]	<0.40[#1]	<1.00[#1]	<0.40[#1]	<0.40[#1]	<0.40[#1]	0.84	<0.40[#1]	419	401	-	-	**362**	-	-	-
MW202	17 Apr 2021	0207_MW202_210417	OMP Apr 2021	Normal	<0.92[#1]	<0.37[#1]	<0.92[#1]	<0.92[#1]	<0.37[#1]	<0.92[#1]	0.55	<0.37[#1]	<0.37[#1]	0.95	<0.37[#1]	449	431	-	-	**386**	-	-	-
MW202	12 Oct 2021	0207_MW202_211012	OMP Oct 2021	Normal	<0.60[#1]	<0.24[#1]	<0.60[#1]	<0.60[#1]	<0.24[#1]	<0.60[#1]	<0.24[#1]	<0.24[#1]	<0.24[#1]	1.60	<0.24[#1]	416	390	-	-	**316**	-	-	-
MW202	17 Apr 2022	0207_MW202_220417	OMP Apr 2022	Normal	<6.25[#1]	<2.50[#1]	<6.25[#1]	<6.25[#1]	<2.50[#1]	<6.25[#1]	<2.50[#1]	<2.50[#1]	<2.50[#1]	<2.50[#1]	<2.50[#1]	638	619	-	-	**575**	-	-	-
MW202	24 Oct 2022	0207_MW202_221024	OMP Oct 2022	Normal	<0.58[#1]	<0.23[#1]	<0.58[#1]	<0.58[#1]	<0.23[#1]	<0.58[#1]	0.65	<0.23[#1]	<0.23[#1]	0.46	<0.23[#1]	266	254	-	-	**222**	-	-	-
MW202	12 Apr 2023	0207_MW202_230412	OMP Apr 2023	Normal	<0.60[#1]	<0.24[#1]	<0.60[#1]	<0.60[#1]	<0.24[#1]	<0.60[#1]	0.50	<0.24[#1]	<0.24[#1]	<0.24[#1]	<0.24[#1]	219	205	-	-	**171**	-	-	-
MW202	25 Oct 2023	0207_MW202_231025	OMP Oct 2023	Normal	<0.26[#1]	<0.10[#1]	<0.26[#1]	<0.26[#1]	<0.10[#1]	<0.26[#1]	<0.28[#1]	<0.10[#1]	<0.10[#1]	<0.70[#1]	<0.10[#1]	216	204	-	-	**171**	-	-	-
MW202	09 Oct 2024	0207_MW202_241009	0207_PFASOMP_OCT_24	Normal	<1.05[#1]	<0.42[#1]	<1.05[#1]	<1.05[#1]	<0.42[#1]	<1.05[#1]	<4.20[#1]	<0.42[#1]	<0.42[#1]	0.46	<0.42[#1]	227	-	220	-	**203**	-	-	-
MW203	23 Oct 2019	0207_MW203_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.43	1.34	-	-	**1.07**	-	-	-
MW203	30 Oct 2019	0207_MW203_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0018	<0.001	<0.001	0.064	<0.001	26.0	23.5	-	-	**15.9**	-	-	-
MW203	25 Mar 2020	0207_MW203_200325	OMP Apr 2020	Normal	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.06[#1]	<0.06[#1]	<0.06[#1]	<0.06[#1]	<0.06[#1]	30.6	27.9	-	-	**19.7**	-	-	-
MW203	25 Mar 2020	0207_QC219_200325	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.061	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW203	22 Oct 2020	0207_MW203_201022	OMP Oct 2020	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	25.5	23.0	-	-	**15.9**	-	-	-
MW203	22 Oct 2020	0207_QC136_201022	OMP Oct 2020	Field_D	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	27.1	24.5	-	-	**17.3**	-	-	-
MW203	22 Oct 2020	0207_QC236_201022	OMP Oct 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.047	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW203	15 Apr 2021	0207_MW203_210415	OMP Apr 2021	Normal	<0.45[#1]	<0.18[#1]	<0.45[#1]	<0.45[#1]	<0.18[#1]	<0.45[#1]	<0.18[#1]	<0.18[#1]	<0.18[#1]	<0.18[#1]	<0.18[#1]	31.5	28.4	-	-	**19.8**	-	-	-
MW203	12 Oct 2021	0207_MW203_211012	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	28.2	25.4	-	-	**17.5**	-	-	-
MW203	17 Apr 2022	0207_MW203_220417	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	11.4	10.5	-	-	**7.28**	-	-	-
MW203	24 Oct 2022	0207_MW203_221024	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	10.3	9.30	-	-	**6.56**	-	-	-
MW203	12 Apr 2023	0207_MW203_230412	OMP Apr 2023	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	16.2	14.8	-	-	**10.8**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW203	24 Oct 2023	0207_MW203_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.6	12.2	-	-	**8.56**	-	-	-
MW203	09 Oct 2024	0207_MW203_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.26	-	8.31	-	**5.08**	-	-	-
MW204	22 Oct 2019	0207_MW204_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.33	<0.05	362	322	-	-	**184**	-	-	-
MW204	22 Oct 2019	0207_QC101_191022	OMP Oct 2019	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.34	<0.05	396	352	-	-	**204**	-	-	-
MW204	22 Oct 2019	0207_QC201_191022	OMP Oct 2019	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.32	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW204	30 Oct 2019	0207_MW204_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0144	<0.001	0.007	0.299	<0.001	289	259	-	-	**154**	-	-	-
MW204	25 Mar 2020	0207_MW204_200325	OMP Apr 2020	Normal	<0.79[#1]	<0.32[#1]	<0.79[#1]	<0.79[#1]	<0.32[#1]	<0.79[#1]	<0.32[#1]	<0.32[#1]	<0.32[#1]	<0.32[#1]	<0.32[#1]	254	226	-	-	**151**	-	-	-
MW204	22 Oct 2020	0207_MW204_201022	OMP Oct 2020	Normal	<0.50[#1]	<0.20[#1]	<0.50[#1]	<0.50[#1]	<0.20[#1]	<0.50[#1]	<0.20[#1]	<0.20[#1]	<0.20[#1]	0.22	<0.20[#1]	199	178	-	-	**126**	-	-	-
MW204	17 Apr 2021	0207_MW204_210417	OMP Apr 2021	Normal	<0.95[#1]	<0.38[#1]	<0.95[#1]	<0.95[#1]	<0.38[#1]	<0.95[#1]	<0.38[#1]	<0.38[#1]	<0.38[#1]	<0.38[#1]	<0.38[#1]	178	159	-	-	**107**	-	-	-
MW204	12 Oct 2021	0207_MW204_211012	OMP Oct 2021	Normal	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.44	<0.10[#1]	253	222	-	-	**157**	-	-	-
MW204	20 Apr 2022	0207_MW204_220420	OMP Apr 2022	Normal	<1.25[#1]	<0.50[#1]	<1.25[#1]	<1.25[#1]	<0.50[#1]	<1.25[#1]	<0.50[#1]	<0.50[#1]	<0.50[#1]	<0.50[#1]	<0.50[#1]	307	276	-	-	**200**	-	-	-
MW204	24 Oct 2022	0207_MW204_221024	OMP Oct 2022	Normal	<1.08[#1]	<0.43[#1]	<1.08[#1]	<1.08[#1]	<0.43[#1]	<1.08[#1]	<0.43[#1]	<0.43[#1]	<0.43[#1]	0.56	<0.43[#1]	489	439	-	-	**307**	-	-	-
MW204	12 Apr 2023	0207_MW204_230412	OMP Apr 2023	Normal	<2.25[#1]	<0.90[#1]	<2.25[#1]	<2.25[#1]	<0.90[#1]	<2.25[#1]	<0.90[#1]	<0.90[#1]	<0.90[#1]	1.44	<0.90[#1]	1,070	945	-	-	**667**	-	-	-
MW204	12 Apr 2023	0207_QC104_230412	OMP Apr 2023	Field_D	<2.08[#1]	<0.83[#1]	<2.08[#1]	<2.08[#1]	<0.83[#1]	<2.08[#1]	<0.83[#1]	<0.83[#1]	<0.83[#1]	2.08	<0.83[#1]	1,100	966	-	-	**704**	-	-	-
MW204	12 Apr 2023	0207_QC204_230412	OMP Apr 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	0.012	1.7	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW204	24 Oct 2023	0207_MW204_231024	OMP Oct 2023	Normal	<1.25[#1]	<0.50[#1]	<1.25[#1]	<1.25[#1]	<0.50[#1]	<1.25[#1]	<0.50[#1]	<0.50[#1]	<0.50[#1]	<3.75[#1]	<0.50[#1]	2,110	1,910	-	-	**1,500**	-	-	-
MW204	09 Oct 2024	0207_MW204_241009	0207_PFASOMP_OCT_24	Normal	<12.5[#1]	<5.00[#1]	<12.5[#1]	<12.5[#1]	<5.00[#1]	<12.5[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	1,580	-	1,440	-	**1,050**	-	-	-
MW204	09 Oct 2024	0207_QC102_241009	0207_PFASOMP_OCT_24	Field_D	<12.5[#1]	<5.00[#1]	<12.5[#1]	<12.5[#1]	<5.00[#1]	<12.5[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	<5.00[#1]	1,540	-	1,380	-	**1,020**	-	-	-
MW204	09 Oct 2024	0207_QC202_241009	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.02	0.59	<0.01	1,715.87	-	1,494.59	346	**1,090**	1,136	-	-
MW205	22 Oct 2019	0207_MW205_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.7	22.2	-	-	**15.3**	-	-	-
MW205	22 Oct 2019	0207_QC102_191022	OMP Oct 2019	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.3	21.8	-	-	**15.3**	-	-	-
MW205	22 Oct 2019	0207_QC202_191022	OMP Oct 2019	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW205	30 Oct 2019	0207_MW205_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0009	<0.001	<0.001	0.010	<0.001	23.2	20.8	-	-	**13.4**	-	-	-
MW205	26 Mar 2020	0207_MW205_200326	OMP Apr 2020	Normal	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.05	<0.05	0.09	<0.05	27.6	24.7	-	-	**17.4**	-	-	-
MW205	22 Oct 2020	0207_MW205_201022	OMP Oct 2020	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	21.8	19.8	-	-	**14.5**	-	-	-
MW205	17 Apr 2021	0207_MW205_210417	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.8	19.8	-	-	**14.2**	-	-	-
MW205	12 Oct 2021	0207_MW205_211012	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	20.8	19.0	-	-	**13.8**	-	-	-
MW205	14 Apr 2022	0207_MW205_220420	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	18.6	17.1	-	-	**12.8**	-	-	-
MW205	24 Oct 2022	0207_MW205_221024	OMP Oct 2022	Normal	<0.59[#1]	<0.24[#1]	<0.59[#1]	<0.59[#1]	<0.24[#1]	<0.59[#1]	<0.24[#1]	<0.24[#1]	<0.24[#1]	<0.24[#1]	<0.24[#1]	90.7	80.5	-	-	**43.1**	-	-	-
MW205	12 Apr 2023	0207_MW205_230412	OMP Apr 2023	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	41.6	37.6	-	-	**26.0**	-	-	-
MW205	24 Oct 2023	0207_MW205_231024	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.5	26.9	-	-	**20.6**	-	-	-
MW205	09 Oct 2024	0207_MW205_241009	0207_PFASOMP_OCT_24	Normal	<0.13[#1]	<0.05[#1]	<0.13[#1]	<0.13[#1]	<0.05[#1]	<0.13[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	23.4	-	21.2	-	**13.7**	-	-	-
MW207	06 Nov 2019	0207_MW207_191106	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	0.28	-	-	**0.24**	-	-	-
MW207	17 Apr 2022	0207_MW207_220417	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.27	0.27	-	-	**0.24**	-	-	-
MW207	25 Oct 2022	0207_MW207_221025	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.00	1.82	-	-	**1.35**	-	-	-
MW207	12 Apr 2023	0207_MW207_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.17	2.84	-	-	**2.15**	-	-	-
MW207	25 Oct 2023	0207_MW207_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.07	2.83	-	-	**2.26**	-	-	-
MW207	10 Oct 2024	0207_MW207_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.72	-	2.55	-	**2.05**	-	-	-
MW221	23 Oct 2019	0207_MW221_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.26	5.77	-	-	**3.72**	-	-	-
MW221	30 Oct 2019	0207_MWC2-I_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	0.008	<0.001	5.87	5.45	-	-	**3.46**	-	-	-
MW221	25 Mar 2020	0207_MW221_200325	OMP Apr 2020	Normal	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.05	<0.05	<0.05	<0.05	7.35	6.75	-	-	**4.55**	-	-	-
MW221	19 Oct 2020	0207_MW221_201019	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.10	7.51	-	-	**4.89**	-	-	-
MW221	14 Apr 2021	0207_MW221_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.22	5.76	-	-	**3.40**	-	-	-

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW221	12 Oct 2021	0207_MW221_211012	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.09	6.49	-	-	**3.87**	-	-	-
MW221	12 Oct 2021	0207_QC157_211012	OMP Oct 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.22	6.54	-	-	**3.94**	-	-	-
MW221	12 Oct 2021	0207_QC257_21012	OMP Oct 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW221	17 Apr 2022	0207_MW221_220417	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.62	6.17	-	-	**4.04**	-	-	-
MW221	25 Oct 2022	0207_MW221_221025	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.50	6.87	-	-	**4.31**	-	-	-
MW221	12 Apr 2023	0207_MW221_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.70	6.14	-	-	**3.94**	-	-	-
MW221	25 Oct 2023	0207_MW221_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.22	6.69	-	-	**4.30**	-	-	-
MW221	09 Oct 2024	0207_MW221_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.44	-	5.93	-	**3.99**	-	-	-
MW222	23 Oct 2019	0207_MW222_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	<0.05	1.88	0.22	58.0	54.1	-	-	**28.4**	-	-	-
MW222	30 Oct 2019	0207_MWC2-K_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0186	<0.001	0.002	1.61	0.173	43.6	40.3	-	-	**18.5**	-	-	-
MW222	25 Mar 2020	0207_MW222_200325	OMP Apr 2020	Normal	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.06[#1]	<0.06[#1]	<0.06[#1]	2.72	0.26	61.5	57.1	-	-	**31.4**	-	-	-
MW222	19 Oct 2020	0207_MW222_201019	OMP Oct 2020	Normal	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	6.40	0.10	62.5	58.6	-	-	**26.7**	-	-	-
MW222	14 Apr 2021	0207_MW222_210414	OMP Apr 2021	Normal	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	3.14	0.13	77.4	72.2	-	-	**38.0**	-	-	-
MW222	12 Oct 2021	0207_MW222_211012	OMP Oct 2021	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	3.67	0.06	64.3	60.1	-	-	**27.9**	-	-	-
MW222	12 Oct 2021	0207_QC158_211012	OMP Oct 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	<0.05	3.57	0.10	68.2	63.5	-	-	**30.4**	-	-	-
MW222	12 Oct 2021	0207_QC258_21012	OMP Oct 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.013	<0.01	<0.01	2.6	0.058	-	-	-	-	-	-	<0.02	<0.05
MW222	17 Apr 2022	0207_MW222_220417	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	1.35	0.14	37.7	35.7	-	-	**21.2**	-	-	-
MW222	17 Apr 2022	0207_QC106_220417	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	<0.05	1.68	0.21	40.4	37.8	-	-	**23.2**	-	-	-
MW222	17 Apr 2022	0207_QC206_220417	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.013	<0.01	<0.01	1.8	0.27	-	-	-	-	-	-	<0.02	<0.05
MW222	26 Oct 2022	0207_MW222_221026	OMP Oct 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.66	0.20	27.1	25.6	-	-	**17.4**	-	-	-
MW222	12 Apr 2023	0207_MW222_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	<0.05	0.57	0.22	27.6	26.0	-	-	**19.0**	-	-	-
MW222	25 Oct 2023	0207_MW222_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.59	0.17	31.5	29.9	-	-	**21.6**	-	-	-
MW222	03 Apr 2024	0207_MW222_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	<0.05	<0.05	0.47	0.10	26.4	24.9	-	-	**18.1**	-	-	-
MW223	23 Oct 2019	0207_MW223_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	4.56	1.23	91.5	87.0	-	-	**27.4**	-	-	-
MW223	31 Oct 2019	0207_MWC2-L_191031	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0272	<0.001	0.005	3.92	0.296	65.6	62.4	-	-	**14.5**	-	-	-
MW223	25 Mar 2020	0207_MW223_200325	OMP Apr 2020	Normal	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.06[#1]	<0.06[#1]	<0.06[#1]	5.56	0.47	87.2	82.8	-	-	**23.2**	-	-	-
MW223	19 Oct 2020	0207_MW223_201019	OMP Oct 2020	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	0.05	<0.05	<0.05	5.00	0.61	98.4	94.2	-	-	**23.7**	-	-	-
MW223	14 Apr 2021	0207_MW223_210414	OMP Apr 2021	Normal	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	6.65	0.74	119	115	-	-	**27.5**	-	-	-
MW223	12 Oct 2021	0207_MW223_211012	OMP Oct 2021	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	0.04	<0.05	<0.05	8.98	0.58	131	126	-	-	**23.5**	-	-	-
MW223	13 Apr 2022	0207_MW223_220413	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	6.56	0.22	111	106	-	-	**21.2**	-	-	-
MW223	13 Apr 2022	0207_QC100_220413	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	<0.05	6.47	0.40	104	99.3	-	-	**25.3**	-	-	-
MW223	13 Apr 2022	0207_QC200_220413	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.024	<0.01	<0.01	5.7	0.41	-	-	-	-	-	-	<0.02	<0.05
MW223	26 Oct 2022	0207_MW223_221026	OMP Oct 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	5.92	0.46	89.6	85.9	-	-	**20.6**	-	-	-
MW223	12 Apr 2023	0207_MW223_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	3.81	0.68	74.0	70.7	-	-	**17.0**	-	-	-
MW223	25 Oct 2023	0207_MW223_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<2.60[#1]	0.58	83.1	82.1	-	-	**13.8**	-	-	-
MW223	25 Oct 2023	0207_QC102_231025	OMP Oct 2023	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	<0.05	3.05	0.62	90.2	88.7	-	-	**15.1**	-	-	-
MW223	25 Oct 2023	0207_QC202_231025	OMP Oct 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.015	<0.01	<0.01	2.1	0.48	-	-	-	-	-	-	<0.02	<0.05
MW223	03 Apr 2024	0207_MW223_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	<0.05	<0.05	3.57	0.30	84.0	81.8	-	-	**17.4**	-	-	-
MW229	22 Oct 2019	0207_MW229_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	34.8	33.6	-	-	**30.7**	-	-	-
MW229	22 Oct 2019	0207_QC104_191022	OMP Oct 2019	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	37.0	35.8	-	-	**32.8**	-	-	-
MW229	22 Oct 2019	0207_QC204_191022	OMP Oct 2019	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW229	30 Oct 2019	0207_MWC3-I_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0067	<0.001	<0.001	0.007	<0.001	31.8	30.8	-	-	**28.0**	-	-	-
MW229	25 Mar 2020	0207_MW229_200325	OMP Apr 2020	Normal	<0.40[#1]	<0.16[#1]	<0.40[#1]	<0.40[#1]	<0.16[#1]	<0.40[#1]	<0.16[#1]	<0.16[#1]	<0.16[#1]	<0.16[#1]	<0.16[#1]	38.7	37.4	-	-	**34.8**	-	-	-
MW229	20 Oct 2020	0207_MW229_201020	OMP Oct 2020	Normal	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	30.7	29.4	-	-	**26.3**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW229	20 Apr 2021	0207_MW229_210414	OMP Apr 2021	Normal	<0.13[#1]	<0.05[#1]	<0.13[#1]	<0.13[#1]	<0.05[#1]	<0.13[#1]	<0.05[#1]	<0.05	<0.05	0.07	<0.05	45.1	43.5	-	-	**39.8**	-	-	-
MW229	12 Oct 2021	0207_MW229_211012	OMP Oct 2021	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	35.1	33.5	-	-	**29.8**	-	-	-
MW229	12 Oct 2021	0207_QC159_211012	OMP Oct 2021	Field_D	<0.11[#1]	<0.04[#1]	<0.11[#1]	<0.11[#1]	<0.04[#1]	<0.11[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	46.6	44.8	-	-	**40.8**	-	-	-
MW229	12 Oct 2021	0207_QC259_21012	OMP Oct 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW229	13 Apr 2022	0207_MW229_220413	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	30.1	29.1	-	-	**26.2**	-	-	-
MW229	27 Oct 2022	0207_MW229_221027	OMP Oct 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	44.2	42.4	-	-	**38.2**	-	-	-
MW229	13 Apr 2023	0207_MW229_230413	OMP Apr 2023	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	52.8	50.7	-	-	**46.0**	-	-	-
MW229	25 Oct 2023	0207_MW229_231025	OMP Oct 2023	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	63.3	61.4	-	-	**56.6**	-	-	-
MW229	03 Apr 2024	0207_MW229_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	44.4	42.8	-	-	**39.7**	-	-	-
MW229	03 Apr 2024	0207_QC102_240403	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	38.8	37.3	-	-	**34.1**	-	-	-
MW229	03 Apr 2024	0207_QC202_240403	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW229	09 Oct 2024	0207_MW229_241009	0207_PFASOMP_OCT_24	Normal	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	64.6	-	64.6	-	**60.8**	-	-	-
MW230	23 Oct 2019	0207_MW230_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	2.05	0.08	53.6	51.6	-	-	**10.0**	-	-	-
MW230	30 Oct 2019	0207_MWD2-A_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0068	<0.001	0.004	1.92	0.117	49.7	47.4	-	-	**12.0**	-	-	-
MW230	31 Oct 2019	0207_QC1mw_191031	OMP Oct 2019	Field_D	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	0.0151	<0.001	0.003	1.34	0.082	34.3	32.6	-	-	**8.29**	-	-	-
MW230	25 Mar 2020	0207_MW230_200325	OMP Apr 2020	Normal	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.05	<0.05	2.61	0.11	57.8	55.2	-	-	**14.4**	-	-	-
MW230	19 Oct 2020	0207_MW230_201019	OMP Oct 2020	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	2.36	<0.05	72.7	70.2	-	-	**15.3**	-	-	-
MW230	14 Apr 2021	0207_MW230_210414	OMP Apr 2021	Normal	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.04[#1]	<0.05	<0.05	2.93	<0.05	79.8	76.8	-	-	**17.3**	-	-	-
MW230	14 Apr 2021	0207_QC146_210414	OMP Apr 2021	Field_D	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.04[#1]	<0.05	<0.05	2.76	<0.05	76.0	73.5	-	-	**13.8**	-	-	-
MW230	14 Apr 2021	0207_QC246_210414	OMP Apr 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	0.011	-	-	-	-	-	-	<0.02	<0.05
MW230	12 Oct 2021	0207_MW230_211012	OMP Oct 2021	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	4.35	0.18	82.3	78.8	-	-	**17.0**	-	-	-
MW230	17 Apr 2022	0207_MW230_220417	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	2.55	0.20	53.9	51.4	-	-	**10.3**	-	-	-
MW230	26 Oct 2022	0207_MW230_221026	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.08	<0.05	6.51	5.93	-	-	**3.27**	-	-	-
MW230	12 Apr 2023	0207_MW230_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.29	3.92	-	-	**1.72**	-	-	-
MW230	25 Oct 2023	0207_MW230_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.64	0.06	23.3	22.4	-	-	**5.33**	-	-	-
MW230	03 Apr 2024	0207_MW230_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.72	<0.05	23.8	23.0	-	-	**5.34**	-	-	-
MW230	03 Apr 2024	0207_QC103_240403	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.68	0.06	23.7	22.8	-	-	**4.84**	-	-	-
MW230	03 Apr 2024	0207_QC203_240403	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.56	0.031	-	-	-	-	-	-	<0.02	<0.05
MW230	09 Oct 2024	0207_MW230_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.04[#1]	<0.05	<0.05	1.17	0.14	33.9	-	32.2	-	**7.27**	-	-	-
MW232	23 Oct 2019	0207_MW232_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	0.20	6.54	42.3	40.2	-	-	**24.5**	-	-	-
MW232	01 Apr 2020	0207_MW232_200401	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.20	1.70	24.9	23.4	-	-	**14.9**	-	-	-
MW232	20 Oct 2020	0207_MW232_201020	OMP Oct 2020	Normal	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.09[#1]	<0.04[#1]	<0.09[#1]	0.04	<0.05	<0.05	0.18	1.78	27.7	26.2	-	-	**17.1**	-	-	-
MW232	14 Apr 2021	0207_MW232_210414	OMP Apr 2021	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	0.24	2.55	36.9	35.2	-	-	**24.7**	-	-	-
MW232	13 Oct 2021	0207_MW232_211013	OMP Oct 2021	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.09	1.38	13.1	12.5	-	-	**5.73**	-	-	-
MW232	17 Apr 2022	0207_MW232_220417	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.13	1.36	33.0	31.3	-	-	**20.8**	-	-	-
MW232	27 Oct 2022	0207_MW232_221027	OMP Oct 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.13	1.21	29.8	28.3	-	-	**16.2**	-	-	-
MW232	12 Apr 2023	0207_MW232_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	<0.05	<0.05	0.17	1.70	37.1	34.0	-	-	**22.3**	-	-	-
MW232	25 Oct 2023	0207_MW232_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.06[#1]	<0.05	<0.05	0.18	0.67	40.8	37.8	-	-	**10.3**	-	-	-
MW232	03 Apr 2024	0207_MW232_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	<0.05	<0.05	<0.05	1.06	12.6	11.8	-	-	**8.21**	-	-	-
MW233	24 Oct 2019	0207_MW233_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.47	2.32	-	-	**1.74**	-	-	-
MW233	26 Mar 2020	0207_MW233_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.05	1.87	-	-	**1.27**	-	-	-
MW233	21 Oct 2020	0207_MW233_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.94	1.76	-	-	**1.27**	-	-	-
MW233	17 Apr 2021	0207_MW233_210417	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.29	2.09	-	-	**1.50**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW233	14 Oct 2021	0207_MW233_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.76	2.55	-	-	**1.97**	-	-	-
MW233	20 Apr 2022	0207_MW233_220420	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.35	1.23	-	-	**0.85**	-	-	-
MW233	20 Apr 2022	0207_QC113_220420	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.35	1.25	-	-	**0.88**	-	-	-
MW233	20 Apr 2022	0207_QC213_220420	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW233	24 Nov 2022	0207_MW233_221124	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.11	1.01	-	-	**0.74**	-	-	-
MW233	13 Apr 2023	0207_MW233_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.58	1.44	-	-	**1.03**	-	-	-
MW233	13 Apr 2023	0207_QC105_230413	OMP Apr 2023	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.69	1.51	-	-	**1.08**	-	-	-
MW233	13 Apr 2023	0207_QC205_230413	OMP Apr 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW233	26 Oct 2023	0207_MW233_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.19	1.09	-	-	**0.83**	-	-	-
MW233	03 Apr 2024	0207_MW233_240403	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.98	0.90	-	-	**0.67**	-	-	-
MW233	03 Apr 2024	0207_QC104_240403	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	0.99	-	-	**0.76**	-	-	-
MW233	03 Apr 2024	0207_QC204_240403	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW233	10 Oct 2024	0207_MW233_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.02	-	0.95	-	**0.75**	-	-	-
MW235	23 Oct 2019	0207_MW235_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	57.7	50.8	-	-	**27.8**	-	-	-
MW235	01 Apr 2020	0207_MW235_200401	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	45.4	40.4	-	-	**21.2**	-	-	-
MW235	01 Apr 2020	0207_QC122_200401	OMP Apr 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	45.9	41.0	-	-	**21.5**	-	-	-
MW235	01 Apr 2020	0207_QC222_200401	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW235	20 Oct 2020	0207_MW235_201020	OMP Oct 2020	Normal	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	42.0	37.0	-	-	**18.1**	-	-	-
MW235	14 Apr 2021	0207_MW235_210414	OMP Apr 2021	Normal	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.09[#1]	<0.04[#1]	<0.09[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	59.5	51.7	-	-	**25.4**	-	-	-
MW235	13 Oct 2021	0207_MW235_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	63.5	54.7	-	-	**27.3**	-	-	-
MW235	20 Apr 2022	0207_MW235_220420	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	19.2	17.3	-	-	**10.7**	-	-	-
MW235	26 Oct 2022	0207_MW235_221026	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	33.0	29.5	-	-	**14.3**	-	-	-
MW235	11 Apr 2023	0207_MW235_230411	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	28.0	24.3	-	-	**11.2**	-	-	-
MW235	26 Oct 2023	0207_MW235_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	36.2	32.1	-	-	**15.3**	-	-	-
MW235	04 Apr 2024	0207_MW235_240404	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.4	24.4	-	-	**11.0**	-	-	-
MW235	10 Oct 2024	0207_MW235_241010	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	38.1	-	33.5	-	**13.2**	-	-	-
MW236	23 Oct 2019	0207_MW236_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	36.4	33.2	-	-	**22.0**	-	-	-
MW236	01 Apr 2020	0207_MW236_200401	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.0	19.0	-	-	**12.2**	-	-	-
MW236	20 Oct 2020	0207_MW236_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	30.3	27.5	-	-	**15.2**	-	-	-
MW236	14 Apr 2021	0207_MW236_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.0	25.8	-	-	**14.4**	-	-	-
MW236	13 Oct 2021	0207_MW236_211013	OMP Oct 2021	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	24.8	22.2	-	-	**11.4**	-	-	-
MW236	13 Oct 2021	0207_QC160_211013	OMP Oct 2021	Field_D	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	60.7	52.9	-	-	**25.9**	-	-	-
MW236	13 Oct 2021	0207_QC260_21013	OMP Oct 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW236	20 Apr 2022	0207_MW236_220420	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	5.94	5.48	-	-	**2.80**	-	-	-
MW236	26 Oct 2022	0207_MW236_221026	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.16	7.59	-	-	**1.42**	-	-	-
MW236	11 Apr 2023	0207_MW236_230411	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.48	8.62	-	-	**3.22**	-	-	-
MW236	26 Oct 2023	0207_MW236_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.11	<0.05	9.88	8.99	-	-	**2.62**	-	-	-
MW236	04 Apr 2024	0207_MW236_240404	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.2	11.4	-	-	**5.02**	-	-	-
MW236	04 Apr 2024	0207_QC107_240404	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	13.3	11.4	-	-	**5.19**	-	-	-
MW236	04 Apr 2024	0207_QC207_240404	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.051	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW236	10 Oct 2024	0207_MW236_241010	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.46[#1]	<0.05	28.4	-	26.1	-	**17.0**	-	-	-
MW241	23 Oct 2019	0207_MW241_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.41	5.15	-	-	**4.43**	-	-	-
MW241	01 Apr 2020	0207_MW241_200401	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.67	6.36	-	-	**5.50**	-	-	-
MW241	20 Oct 2020	0207_MW241_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	4.99	4.74	-	-	**4.06**	-	-	-
MW241	14 Apr 2021	0207_MW241_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.11	5.84	-	-	**5.21**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW241	13 Oct 2021	0207_MW241_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.15	6.79	-	-	**5.96**	-	-	-
MW241	19 Apr 2022	0207_MW241_220419	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	5.87	5.65	-	-	**5.09**	-	-	-
MW241	26 Oct 2022	0207_MW241_221026	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.95	8.70	-	-	**8.02**	-	-	-
MW241	11 Apr 2023	0207_MW241_230411	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.45	6.20	-	-	**5.68**	-	-	-
MW241	26 Oct 2023	0207_MW241_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.82	<0.05	6.65	6.43	-	-	**5.10**	-	-	-
MW241	04 Apr 2024	0207_MW241_240404	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.52	5.35	-	-	**4.98**	-	-	-
MW241	04 Apr 2024	0207_QC106_240404	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.55	5.36	-	-	**4.97**	-	-	-
MW241	04 Apr 2024	0207_QC206_240404	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW241	10 Oct 2024	0207_MW241_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.37	-	6.17	-	**5.84**	-	-	-
MW242	22 Oct 2019	0207_MW242_191022	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	30.0	27.5	-	-	**19.7**	-	-	-
MW242	26 Mar 2020	0207_MW242_200326	OMP Apr 2020	Normal	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	0.33	<0.09[#1]	0.95	0.95	-	-	**0.48**	-	-	-
MW242	23 Oct 2020	0207_MW242_201023	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.10	<0.05	0.50	0.50	-	-	**0.33**	-	-	-
MW242	20 Apr 2021	0207_MW242_210420	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.57	1.46	-	-	**1.17**	-	-	-
MW242	11 Oct 2021	0207_MW242_211011	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.83	1.70	-	-	**1.34**	-	-	-
MW242	18 Apr 2022	0207_MW242_220418	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	0.05	0.05	-	-	0.05	-	-	-
MW242	25 Nov 2022	0207_MW242_221124	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW242	13 Apr 2023	0207_MW242_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW242	05 Apr 2024	0207_MW242_240405	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-	<0.01	-	-	-
MW245	23 Oct 2019	0207_MW245_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.52	0.48	-	-	**0.38**	-	-	-
MW245	26 Mar 2020	0207_MW245_200326	OMP Apr 2020	Normal	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.08[#1]	<0.03[#1]	<0.08[#1]	<0.03[#1]	<0.05	<0.05	<0.05	<0.05	0.63	0.59	-	-	**0.49**	-	-	-
MW245	20 Oct 2020	0207_MW245_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.50	0.46	-	-	**0.35**	-	-	-
MW245	20 Oct 2020	0207_QC133_201020	OMP Oct 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.51	0.47	-	-	**0.36**	-	-	-
MW245	20 Oct 2020	0207_QC233_201020	OMP Oct 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.012	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW245	20 Apr 2021	0207_MW245_210420	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.46	0.42	-	-	**0.32**	-	-	-
MW245	11 Oct 2021	0207_MW245_211011	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.53	0.49	-	-	**0.38**	-	-	-
MW245	11 Oct 2021	0207_QC155_211011	OMP Oct 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.55	0.50	-	-	**0.39**	-	-	-
MW245	11 Oct 2021	0207_QC255_21011	OMP Oct 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW245	18 Apr 2022	0207_MW245_220418	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	0.32	-	-	**0.28**	-	-	-
MW245	18 Apr 2022	0207_QC108_220418	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.44	0.40	-	-	**0.32**	-	-	-
MW245	18 Apr 2022	0207_QC208_220418	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW245	03 Nov 2022	0207_MW245_221103	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.44	0.40	-	-	**0.31**	-	-	-
MW245	13 Apr 2023	0207_MW245_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.62	0.57	-	-	**0.45**	-	-	-
MW245	26 Oct 2023	0207_MW245_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	1.73	<0.05	2.19	2.15	-	-	**0.33**	-	-	-
MW245	05 Apr 2024	0207_MW245_240405	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.31	0.29	-	-	**0.22**	-	-	-
MW245	08 Oct 2024	0207_MW245_241008	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.40	-	0.40	-	**0.30**	-	-	-
MW249	23 Oct 2019	0207_MW249_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.33	5.57	-	-	**3.21**	-	-	-
MW249	01 Apr 2020	0207_MW249_200401	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.46	7.36	-	-	**4.04**	-	-	-
MW249	01 Apr 2020	0207_QC123_200401	OMP Apr 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.19	7.15	-	-	**3.74**	-	-	-
MW249	01 Apr 2020	0207_QC223_200401	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW249	20 Oct 2020	0207_MW249_201020	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.38	7.40	-	-	**4.08**	-	-	-
MW249	14 Apr 2021	0207_MW249_210414	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.22	7.22	-	-	**4.19**	-	-	-
MW249	13 Oct 2021	0207_MW249_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.52	8.41	-	-	**4.52**	-	-	-
MW249	19 Apr 2022	0207_MW249_220419	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	5.30	4.73	-	-	**2.69**	-	-	-
MW249	19 Apr 2022	0207_QC111_220419	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.32	4.76	-	-	**2.63**	-	-	-
MW249	19 Apr 2022	0207_QC211_220419	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW249	26 Oct 2022	0207_MW249_221026	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.09	6.32	-	-	**3.39**	-	-	-
MW249	26 Oct 2022	0207_QC164_221026	OMP Oct 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.43	4.83	-	-	**2.60**	-	-	-
MW249	26 Oct 2022	0207_QC264_221026	OMP Oct 2022	Interlab_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	5.15	4.56	-	-	**2.55**	-	-	-
MW249	11 Apr 2023	0207_MW249_230411	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.12	7.94	-	-	**4.41**	-	-	-
MW249	26 Oct 2023	0207_MW249_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.47	6.56	-	-	**3.61**	-	-	-
MW249	04 Apr 2024	0207_MW249_240404	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.58	6.51	-	-	**3.52**	-	-	-
MW249	04 Apr 2024	0207_QC108_240404	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	8.77	7.52	-	-	**4.30**	-	-	-
MW249	04 Apr 2024	0207_QC208_240404	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW249	10 Oct 2024	0207_MW249_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.45	-	8.28	-	**4.50**	-	-	-
MW252	23 Oct 2019	0207_MW252_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	49.7	46.8	-	-	**39.5**	-	-	-
MW252	01 Apr 2020	0207_MW252_200401	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	39.6	36.5	-	-	**30.2**	-	-	-
MW252	20 Oct 2020	0207_MW252_201020	OMP Oct 2020	Normal	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	28.8	27.3	-	-	**22.8**	-	-	-
MW252	14 Apr 2021	0207_MW252_210414	OMP Apr 2021	Normal	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	41.8	38.4	-	-	**28.5**	-	-	-
MW252	13 Oct 2021	0207_MW252_211013	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	22.9	21.2	-	-	**17.3**	-	-	-
MW252	20 Apr 2022	0207_MW252_220420	OMP Apr 2022	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	6.69	6.44	-	-	**5.45**	-	-	-
MW252	20 Apr 2022	0207_QC112_220420	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.78	6.46	-	-	**5.35**	-	-	-
MW252	20 Apr 2022	0207_QC212_220420	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW252	26 Oct 2022	0207_MW252_221026	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.20	3.09	-	-	**2.73**	-	-	-
MW252	11 Apr 2023	0207_MW252_230411	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	14.4	13.6	-	-	**11.3**	-	-	-
MW252	26 Oct 2023	0207_MW252_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.28	<0.05	15.9	15.2	-	-	**12.1**	-	-	-
MW252	26 Oct 2023	0207_QC103_231026	OMP Oct 2023	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	20.8	19.8	-	-	**15.9**	-	-	-
MW252	26 Oct 2023	0207_QC203_231026	OMP Oct 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.067	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW252	04 Apr 2024	0207_MW252_240404	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	19.8	18.5	-	-	**14.6**	-	-	-
MW252	04 Apr 2024	0207_QC105_240404	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.3	19.9	-	-	**15.9**	-	-	-
MW252	04 Apr 2024	0207_QC205_240404	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW252	10 Oct 2024	0207_MW252_241010	0207_PFASOMP_OCT_24	Normal	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	69.6	-	67.5	-	**60.6**	-	-	-
MW255	23 Oct 2019	0207_MW255_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.22	0.20	-	-	**0.18**	-	-	-
MW255	26 Mar 2020	0207_MW255_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.24	-	-	**0.20**	-	-	-
MW255	21 Oct 2020	0207_MW255_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	0.21	-	-	**0.19**	-	-	-
MW255	13 Apr 2021	0207_MW255_210413	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	0.15	-	-	**0.15**	-	-	-
MW255	13 Apr 2021	0207_QC142_210413	OMP Apr 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	0.14	-	-	**0.14**	-	-	-
MW255	13 Apr 2021	0207_QC242_210413	OMP Apr 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW255	15 Oct 2021	0207_MW255_211015	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.30	0.27	-	-	**0.22**	-	-	-
MW255	15 Apr 2022	0207_MW255_220415	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-	0.04	-	-	-
MW255	26 Oct 2023	0207_MW255_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.35	0.32	-	-	**0.29**	-	-	-
MW255	10 Apr 2024	0207_MW255_240410	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.27	0.27	-	-	**0.23**	-	-	-
MW257	23 Oct 2019	0207_MW257_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.35	0.35	-	-	**0.35**	-	-	-
MW257	26 Mar 2020	0207_MW257_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.42	0.42	-	-	**0.41**	-	-	-
MW257	26 Mar 2020	0207_QC117_200326	OMP Apr 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.47	0.47	-	-	**0.47**	-	-	-
MW257	26 Mar 2020	0207_QC217_200326	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW257	21 Oct 2020	0207_MW257_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.06	0.06	-	-	0.06	-	-	-
MW257	17 Apr 2021	0207_MW257_210417	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.17	0.17	-	-	**0.17**	-	-	-
MW257	14 Oct 2021	0207_MW257_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.24	-	-	**0.24**	-	-	-
MW257	15 Apr 2022	0207_MW257_220415	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-	0.02	-	-	-
MW257	27 Oct 2022	0207_MW257_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	0.23	-	-	**0.23**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW257	14 Apr 2023	0207_MW257_230414	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.24	0.24	-	-	**0.24**	-	-	-
MW257	26 Oct 2023	0207_MW257_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.09	0.09	-	-	**0.09**	-	-	-
MW257	10 Apr 2024	0207_MW257_240410	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.20	0.20	-	-	**0.20**	-	-	-
MW257	09 Oct 2024	0207_MW257_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.23	-	0.23	-	**0.23**	-	-	-
MW262	21 Oct 2019	0207_MW262_191024	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.60	0.56	-	-	**0.46**	-	-	-
MW262	24 Mar 2020	0207_MW262_200323	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	0.74	-	-	**0.62**	-	-	-
MW262	21 Oct 2020	0207_MW262_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.32	0.30	-	-	**0.19**	-	-	-
MW262	19 Apr 2021	0207_MW262_210419	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.68	0.62	-	-	**0.50**	-	-	-
MW262	19 Apr 2021	0207_QC154_210419	OMP Apr 2021	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.68	0.64	-	-	**0.53**	-	-	-
MW262	19 Apr 2021	0207_QC254_210419	OMP Apr 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW262	14 Oct 2021	0207_MW262_211014	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	0.54	-	-	**0.42**	-	-	-
MW262	16 Apr 2022	0207_MW262_220416	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.70	0.66	-	-	**0.53**	-	-	-
MW262	02 Nov 2022	0207_MW262_221102	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.53	0.49	-	-	**0.34**	-	-	-
MW262	14 Apr 2023	0207_MW262_230414	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.00	0.91	-	-	**0.71**	-	-	-
MW262	26 Oct 2023	0207_MW262_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.78	0.72	-	-	**0.55**	-	-	-
MW262	11 Apr 2024	0207_MW262_240411	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.52	0.48	-	-	**0.36**	-	-	-
MW262	09 Oct 2024	0207_MW262_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.07	-	0.97	-	**0.74**	-	-	-
MW269	25 Oct 2019	0207_MW269_191025	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.19	<0.05	0.35	0.35	-	-	**0.13**	-	-	-
MW269	25 Mar 2020	0207_MW269_200325	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.09	<0.05	0.22	0.22	-	-	**0.13**	-	-	-
MW269	21 Oct 2020	0207_MW269_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW269	15 Apr 2021	0207_MW269_210415	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.14	0.14	-	-	**0.14**	-	-	-
MW269	15 Oct 2021	0207_MW269_211015	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.12	0.12	-	-	**0.12**	-	-	-
MW269	13 Apr 2022	0207_MW269_220413	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.08	0.08	-	-	**0.08**	-	-	-
MW269	02 Nov 2022	0207_MW269_221102	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.10	0.10	-	-	**0.10**	-	-	-
MW269	18 Apr 2023	0207_MW269_230418	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.22	<0.05	0.22	0.22	-	-	<0.01	-	-	-
MW269	25 Oct 2023	0207_MW269_231025	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	0.15	0.15	-	-	**0.09**	-	-	-
MW269	08 Apr 2024	0207_MW269_240408	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.16	<0.05	0.23	0.23	-	-	**0.07**	-	-	-
MW269	09 Oct 2024	0207_MW269_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.27	<0.05	0.34	-	0.34	-	**0.07**	-	-	-
MW272	23 Oct 2019	0207_MW272_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.69	0.63	-	-	**0.49**	-	-	-
MW272	26 Mar 2020	0207_MW272_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.86	0.78	-	-	**0.58**	-	-	-
MW272	21 Oct 2020	0207_MW272_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.93	0.86	-	-	**0.65**	-	-	-
MW272	21 Oct 2020	0207_QC135_201021	OMP Oct 2020	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.95	0.87	-	-	**0.65**	-	-	-
MW272	21 Oct 2020	0207_QC235_201021	OMP Oct 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW272	19 Apr 2021	0207_MW272_210419	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	0.83	-	-	**0.58**	-	-	-
MW272	15 Oct 2021	0207_MW272_211015	OMP Oct 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.13	1.01	-	-	**0.76**	-	-	-
MW272	15 Apr 2022	0207_QC105_220416	OMP Apr 2022	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.55	0.51	-	-	**0.41**	-	-	-
MW272	16 Apr 2022	0207_MW272_220416	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.49	0.45	-	-	**0.34**	-	-	-
MW272	16 Apr 2022	0207_QC205_220416	OMP Apr 2022	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW272	27 Oct 2022	0207_MW272_221027	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.58	0.53	-	-	**0.39**	-	-	-
MW272	13 Apr 2023	0207_MW272_230413	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.90	0.82	-	-	**0.59**	-	-	-
MW272	13 Apr 2023	0207_QC107_230413	OMP Apr 2023	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.98	0.86	-	-	**0.64**	-	-	-
MW272	13 Apr 2023	0207_QC207_230413	OMP Apr 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW272	26 Oct 2023	0207_MW272_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.76	0.70	-	-	**0.54**	-	-	-
MW272	08 Apr 2024	0207_MW272_240408	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.66	0.58	-	-	**0.44**	-	-	-
MW272	09 Oct 2024	0207_MW272_241009	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	-	0.79	-	**0.58**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW276	23 Oct 2019	0207_MW276_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	23.1	21.5	-	-	**17.8**	-	-	-
MW276	23 Mar 2020	0207_QC118_200323	OMP Apr 2020	Field_D	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.10[#1]	<0.04[#1]	<0.10[#1]	<0.04[#1]	<0.05	<0.05	<0.05	<0.05	28.0	25.9	-	-	**21.9**	-	-	-
MW276	26 Mar 2020	0207_MW276_200326	OMP Apr 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	28.5	26.0	-	-	**20.8**	-	-	-
MW276	26 Mar 2020	0207_QC218_200326	OMP Apr 2020	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW276	21 Oct 2020	0207_MW276_201021	OMP Oct 2020	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	25.9	24.1	-	-	**19.8**	-	-	-
MW276	19 Apr 2021	0207_MW276_210419	OMP Apr 2021	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	25.3	23.4	-	-	**19.6**	-	-	-
MW276	19 Apr 2021	0207_QC153_210419	OMP Apr 2021	Field_D	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	29.2	27.3	-	-	**22.6**	-	-	-
MW276	19 Apr 2021	0207_QC253_210419	OMP Apr 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW276	14 Oct 2021	0207_MW276_211014	OMP Oct 2021	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	27.6	25.5	-	-	**20.6**	-	-	-
MW276	15 Apr 2022	0207_MW276_220415	OMP Apr 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.5	22.9	-	-	**19.0**	-	-	-
MW276	24 Nov 2022	0207_MW276_221124	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	21.9	20.3	-	-	**16.6**	-	-	-
MW276	13 Apr 2023	0207_MW276_230413	OMP Apr 2023	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	24.6	22.7	-	-	**18.4**	-	-	-
MW276	26 Oct 2023	0207_MW276_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	24.6	23.1	-	-	**19.4**	-	-	-
MW276	11 Apr 2024	0207_MW276_240411	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	19.1	17.8	-	-	**15.1**	-	-	-
MW276	09 Oct 2024	0207_MW276_241009	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.05	<0.05	20.2	-	19.0	-	**15.5**	-	-	-
MW299	23 Oct 2019	0207_MW299_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	18.0	15.2	-	-	**7.70**	-	-	-
MW299	30 Oct 2019	0207_MWS1-B_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.001	0.070	<0.001	41.5	37.8	-	-	**20.2**	-	-	-
MW299	30 Oct 2019	0207_QC1mw_191030	OMP Oct 2019	Field_D	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	0.063	<0.001	44.8	40.8	-	-	**21.1**	-	-	-
MW299	26 Mar 2020	0207_MW299_200326	OMP Apr 2020	Normal	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.16[#1]	<0.06[#1]	<0.16[#1]	<0.06[#1]	<0.06[#1]	<0.06[#1]	0.10	<0.06[#1]	52.0	47.1	-	-	**27.2**	-	-	-
MW299	20 Oct 2020	0207_MW299_201020	OMP Oct 2020	Normal	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	55.8	50.3	-	-	**26.4**	-	-	-
MW299	17 Apr 2021	0207_MW299_210417	OMP Apr 2021	Normal	<0.53[#1]	<0.21[#1]	<0.53[#1]	<0.53[#1]	<0.21[#1]	<0.53[#1]	<0.21[#1]	<0.21[#1]	<0.21[#1]	<0.21[#1]	<0.21[#1]	49.2	44.5	-	-	**24.4**	-	-	-
MW299	12 Oct 2021	0207_MW299_211012	OMP Oct 2021	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.25	<0.05	98.9	90.0	-	-	**46.7**	-	-	-
MW299	17 Apr 2022	0207_MW299_220417	OMP Apr 2022	Normal	<0.61[#1]	<0.24[#1]	<0.61[#1]	<0.61[#1]	<0.24[#1]	<0.61[#1]	<0.24[#1]	<0.24[#1]	<0.24[#1]	1.20	<0.24[#1]	310	287	-	-	**169**	-	-	-
MW299	26 Oct 2022	0207_MW299_221026	OMP Oct 2022	Normal	<2.38[#1]	<0.10[#1]	<0.24[#1]	<2.38[#1]	<0.10[#1]	<0.24[#1]	<0.95[#1]	<0.10[#1]	<0.95[#1]	<0.95[#1]	<0.10[#1]	313	294	-	-	**177**	-	-	-
MW299	12 Apr 2023	0207_MW299_230412	OMP Apr 2023	Normal	<1.09[#1]	<0.44[#1]	<1.09[#1]	<1.09[#1]	<0.44[#1]	<1.09[#1]	<0.44[#1]	<0.44[#1]	<0.44[#1]	<0.44[#1]	<0.44[#1]	361	346	-	-	**277**	-	-	-
MW299	24 Oct 2023	0207_MW299_231024	OMP Oct 2023	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.69	<0.10[#1]	282	262	-	-	**163**	-	-	-
MW299	10 Oct 2024	0207_MW299_241010	0207_PFASOMP_OCT_24	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.08	<0.05	43.7	-	40.4	-	**23.8**	-	-	-
MW300	23 Oct 2019	0207_MW300_191023	OMP Oct 2019	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.11	<0.05	167	149	-	-	**80.9**	-	-	-
MW300	30 Oct 2019	0207_MWS1-D_191030	OMP Oct 2019	Normal	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	0.003	0.102	0.002	15.4	13.9	-	-	**7.81**	-	-	-
MW300	24 Mar 2020	0207_MW300_200324	OMP Apr 2020	Normal	<0.48[#1]	<0.19[#1]	<0.48[#1]	<0.48[#1]	<0.19[#1]	<0.48[#1]	<0.19[#1]	<0.19[#1]	<0.19[#1]	<0.19[#1]	<0.19[#1]	174	156	-	-	**90.6**	-	-	-
MW300	20 Oct 2020	0207_MW300_201020	OMP Oct 2020	Normal	<0.44[#1]	<0.18[#1]	<0.44[#1]	<0.44[#1]	<0.18[#1]	<0.44[#1]	<0.18[#1]	<0.18[#1]	<0.18[#1]	<0.18[#1]	<0.18[#1]	166	150	-	-	**93.8**	-	-	-
MW300	23 Mar 2021	0207_MWS1-D_210323	OMP Apr 2021	Normal	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.18[#1]	<0.07[#1]	<0.18[#1]	<0.07[#1]	<0.07[#1]	<0.07[#1]	0.11	<0.07[#1]	121	111	-	-	**68.1**	-	-	-
MW300	17 Apr 2021	0207_MW300_210417	OMP Apr 2021	Normal	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.25[#1]	<0.10[#1]	<0.25[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.16	<0.10[#1]	172	157	-	-	**108**	-	-	-
MW300	17 Apr 2021	0207_QC151_210417	OMP Apr 2021	Field_D	<0.21[#1]	<0.08[#1]	<0.21[#1]	<0.21[#1]	<0.08[#1]	<0.21[#1]	<0.08[#1]	<0.08[#1]	<0.08[#1]	0.12	<0.08[#1]	167	154	-	-	**106**	-	-	-
MW300	17 Apr 2021	0207_QC251_210417	OMP Apr 2021	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.12	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW300	12 Oct 2021	0207_MW300_211012	OMP Oct 2021	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	0.13	<0.05	151	137	-	-	**87.0**	-	-	-
MW300	17 Apr 2022	0207_MW300_220417	OMP Apr 2022	Normal	<0.68[#1]	<0.27[#1]	<0.68[#1]	<0.68[#1]	<0.27[#1]	<0.68[#1]	<0.27[#1]	<0.27[#1]	<0.27[#1]	<0.27[#1]	<0.27[#1]	163	154	-	-	**120**	-	-	-
MW300	26 Oct 2022	0207_MW300_221026	OMP Oct 2022	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.16	<0.10[#1]	143	134	-	-	**101**	-	-	-
MW300	12 Apr 2023	0207_MW300_230412	OMP Apr 2023	Normal	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.24[#1]	<0.10[#1]	<0.24[#1]	<0.10[#1]	<0.10[#1]	<0.10[#1]	0.12	<0.10[#1]	139	128	-	-	**94.0**	-	-	-
MW300	24 Oct 2023	0207_MW300_231024	OMP Oct 2023	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.62	<0.05	135	125	-	-	**91.5**	-	-	-
MW300	10 Oct 2024	0207_MW300_241010	0207_PFASOMP_OCT_24	Normal	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.22[#1]	<0.09[#1]	<0.22[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	<0.90[#1]	<0.09[#1]	96.6	-	89.4	-	**68.3**	-	-	-
MW562	20 Apr 2022	0207_MW562_220420	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	23.0	20.7	-	-	**9.42**	-	-	-
MW562	03 Nov 2022	0207_MW562_221103	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	28.4	25.5	-	-	**14.8**	-	-	-

Appendix B
Table 3
Historical Analytical Results

					PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums						PFAS	
					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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	Sum of WA DWER PFAS (n=10)*	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	8:2 Polyfluoroalkyl phosphate diester (8:2 diPAP)	Perfluorooctadecanoic acid (PFODA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.001	0.0005	0.001	0.001	0.0005	0.001	0.0005	0.001	0.001	0.001	0.001	0.0003	0.0003	0.01	0.01	0.0003	0.01	0.02	0.05
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems																							
PFAS NEMP 2.0 2020 Health Drinking Water																				**0.07**			
Location	**Date**	**Field ID**	**Monitoring Round**	**Sample Type**																			
MW562	12 Apr 2023	0207_MW562_230412	OMP Apr 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.75	0.69	-	-	**0.20**	-	-	-
MW562	26 Oct 2023	0207_MW562_231026	OMP Oct 2023	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.67	0.61	-	-	**0.21**	-	-	-
MW562	04 Apr 2024	0207_MW562_240404	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.59	0.50	-	-	**0.21**	-	-	-
MW562	10 Oct 2024	0207_MW562_241010	0207_PFASOMP_OCT_24	Normal	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.23[#1]	<0.09[#1]	<0.23[#1]	<0.09[#1]	<0.09[#1]	<0.09[#1]	0.16	<0.09[#1]	43.3	-	38.8	-	**23.2**	-	-	-
MW563	20 Apr 2022	0207_MW563_220420	OMP Apr 2022	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.05	<0.05	0.26	0.26	-	-	<0.02[#1]	-	-	-
MW563	03 Nov 2022	0207_MW563_221103	OMP Oct 2022	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.48	0.44	-	-	**0.11**	-	-	-
MW563	12 Apr 2023	0207_MW563_230412	OMP Apr 2023	Normal	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.12[#1]	<0.05[#1]	<0.12[#1]	<0.05[#1]	<0.05	<0.05	<0.05	<0.05	30.7	27.2	-	-	**16.7**	-	-	-
MW563	26 Oct 2023	0207_MW563_231026	OMP Oct 2023	Normal	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	<0.10[#1]	<0.05	32.1	28.8	-	-	**19.4**	-	-	-
MW563	26 Oct 2023	0207_QC104_231026	OMP Oct 2023	Field_D	<0.06[#1]	<0.02	<0.06[#1]	<0.06[#1]	<0.02	<0.06[#1]	<0.02	<0.05	<0.05	0.06	<0.05	34.0	30.5	-	-	**20.6**	-	-	-
MW563	26 Oct 2023	0207_QC204_231026	OMP Oct 2023	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.05	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW563	04 Apr 2024	0207_MW563_240404	OMP Apr 2024	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.8	26.2	-	-	**16.6**	-	-	-
MW563	04 Apr 2024	0207_QC109_240404	OMP Apr 2024	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	29.8	26.2	-	-	**17.0**	-	-	-
MW563	04 Apr 2024	0207_QC209_240404	OMP Apr 2024	Interlab_D	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	0.035	<0.01	-	-	-	-	-	-	<0.02	<0.05
MW563	10 Oct 2024	0207_MW563_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	-	0.79	-	**0.34**	-	-	-
MW568	08 Oct 2024	0207_MW568_241008	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.46	<0.05	0.60	-	0.60	-	<0.01	-	-	-
MW569	10 Oct 2024	0207_MW569_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	2.11	-	1.94	-	**0.44**	-	-	-
MW570D	10 Oct 2024	0207_MW570_D_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.87	-	0.83	-	**0.69**	-	-	-
MW570S	10 Oct 2024	0207_MW570_S_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.91	-	0.82	-	**0.70**	-	-	-
MW570S	10 Oct 2024	0207_QC106_241010	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	1.09	-	1.01	-	**0.78**	-	-	-
MW570S	10 Oct 2024	0207_QC206_241010	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	1.85	-	1.64	0.48	**1.22**	1.26	-	-
MW571D	10 Oct 2024	0207_MW571_D_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	3.27	-	3.03	-	**2.28**	-	-	-
MW571S	10 Oct 2024	0207_MW571_S_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.08	-	6.50	-	**5.27**	-	-	-
MW572D	10 Oct 2024	0207_MW572_D_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.36	-	8.39	-	**5.57**	-	-	-
MW572S	10 Oct 2024	0207_MW572_S_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	9.62	-	8.82	-	**5.76**	-	-	-
MW573D	10 Oct 2024	0207_MW573_D_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.08	<0.05	9.68	-	8.89	-	**5.74**	-	-	-
MW573S	10 Oct 2024	0207_MW573_S_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	10.3	-	9.24	-	**6.36**	-	-	-
MW574D	08 Oct 2024	0207_MW574_D_241008	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.85	-	0.77	-	**0.59**	-	-	-
MW574S	08 Oct 2024	0207_MW574_S_241008	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.97	-	0.89	-	**0.59**	-	-	-
MW575	10 Oct 2024	0207_MW575_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	6.95	-	6.35	-	**4.78**	-	-	-
MW575	10 Oct 2024	0207_QC105_241010	0207_PFASOMP_OCT_24	Field_D	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	7.18	-	6.52	-	**4.97**	-	-	-
MW575	10 Oct 2024	0207_QC205_241010	0207_PFASOMP_OCT_24	Interlab_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	7.19	-	6.48	2.54	**4.7**	4.84	-	-
MW576	10 Oct 2024	0207_MW576_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.45	-	0.45	-	**0.40**	-	-	-
MW577	10 Oct 2024	0207_MW577_241010	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.04[#1]	-	<0.04[#1]	-	<0.04[#1]	-	-	-
MW578	08 Oct 2024	0207_MW578_241008	0207_PFASOMP_OCT_24	Normal	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.60	-	0.55	-	**0.44**	-	-	-

Comments
#1 Reported Analyte LOR is higher than Requested Analyte LOR
#2 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#3 The LORs have been raised due to matrix interference
Locations where new maximums were recorded

Appendix B
Table 4
Duplicate RPD Results

					PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Perfluoroalkyl Sulfonamide						
					Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)	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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.02
Location	**Date**	**Field ID**	**Lab Report**	**Sample Type**																											
MW038	01 Oct 2024	0207_MW038_241001	EB2432633	Normal	0.05	<0.02	<0.02	0.02	0.70	<0.02	0.05	0.33	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW038	01 Oct 2024	0207_QC201_241001	EB2432633	Field_D	0.06	<0.02	<0.02	0.03	0.71	<0.02	0.05	0.32	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
RPD (%)					18	0	0	40	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MW038	01 Oct 2024	0207_MW038_241001	EB2432633	Normal	0.05	<0.02	<0.02	0.02	0.70	<0.02	0.05	0.33	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW038	01 Oct 2024	0207_QC101_241001	EB2432633	Field_D	0.05	<0.02	<0.02	0.02	0.66	<0.02	0.05	0.32	<0.1	<0.02	<0.02	<0.02	0.06	<0.02	0.04	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
RPD (%)					0	0	0	0	6	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MW178	09 Oct 2024	0207_MW178_241009	EB2432583	Normal	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW178	09 Oct 2024	0207_QC103_241009	EB2432583	Field_D	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
RPD (%)					0	0	-	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MW178	09 Oct 2024	0207_MW178_241009	EB2432583	Normal	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW178	09 Oct 2024	0207_QC203_241009	1148776	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01#1	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RPD (%)					0	0	-	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0
MW204	09 Oct 2024	0207_MW204_241009	EB2432583	Normal	116	<5.00#2	-	37.5	338	-	111	712	28.5	<5.00#2	<5.00#2	21.0	146	<5.00#2	41.0	33.0	<12.5#2	<5.00#2	<5.00#2	<12.5#2	<12.5#2	<5.00#2	<12.5#2	<12.5#2	<5.00#2	<12.5#2	<5.00#2
MW204	09 Oct 2024	0207_QC102_241009	EB2432583	Field_D	120	<5.00#2	-	40.5	310	-	122	712	<250#2	<5.00#2	<5.00#2	21.5	142	<5.00#2	39.5	32.5	<12.5#2	<5.00#2	<5.00#2	<12.5#2	<12.5#2	<5.00#2	<12.5#2	<12.5#2	<5.00#2	<12.5#2	<5.00#2
RPD (%)					3	0	-	8	9	-	9	0	0	0	0	2	3	0	4	2	0	0	0	0	0	0	0	0	0	0	0
MW204	09 Oct 2024	0207_MW204_241009	EB2432583	Normal	116	<5.00#2	-	37.5	338	-	111	712	28.5	<5.00#2	<5.00#2	21.0	146	<5.00#2	41.0	33.0	<12.5#2	<5.00#2	<5.00#2	<12.5#2	<12.5#2	<5.00#2	<12.5#2	<12.5#2	<5.00#2	<12.5#2	<5.00#2
MW204	09 Oct 2024	0207_QC202_241009	1148776	Interlab_D	110	<0.1#3	<0.1#3	53#1	300#1	58	110#1	790#1	21	<0.01	<0.01	16#1	170	0.26#1	46#1	41	<0.01	<0.01	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RPD (%)					5	0	-	**34**	12	-	1	10	30	0	0	27	15	0	11	22	0	0	0	-	0	0	0	0	0	0	0
MW173	10 Oct 2024	0207_MW173_241010	EB2432583	Normal	0.46	<0.02	-	0.26	4.16	-	0.56	3.88	0.6	0.04	<0.02	0.96	2.31	0.18	0.83	2.21	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW173	10 Oct 2024	0207_QC104_241010	EB2432583	Field_D	0.42	<0.02	-	0.17	2.88	-	0.40	2.72	0.4	0.03	<0.02	0.77	1.76	0.14	0.59	1.39	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
RPD (%)					9	0	-	**42**	**36**	-	**33**	**35**	**40**	29	0	22	27	25	**34**	**46**	0	0	0	0	0	0	0	0	0	0	0
MW173	10 Oct 2024	0207_MW173_241010	EB2432583	Normal	0.46	<0.02	-	0.26	4.16	-	0.56	3.88	0.6	0.04	<0.02	0.96	2.31	0.18	0.83	2.21	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW173	10 Oct 2024	0207_QC204_241010	1148776	Interlab_D	0.40	<0.01	<0.01	0.14#1	2.7#1	0.17	0.40#1	3.2#1	0.48	0.02	<0.01	0.68#1	2.0	0.11#1	0.56#1	1.5	<0.01	<0.01	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RPD (%)					14	0	-	**60**	**43**	-	**33**	19	22	67	0	**34**	14	**48**	**39**	**38**	0	0	0	-	0	0	0	0	0	0	0
MW570	10 Oct 2024	0207_MW570_D_241010	EB2432603	Normal	0.05	<0.02	-	<0.04#2	0.29	-	0.04	0.40	<0.2#2	<0.02	<0.02	<0.04#2	0.09	<0.02	<0.04#2	<0.04#2	<0.05	<0.02	<0.02	-	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW570	10 Oct 2024	0207_QC106_241010	EB2432603	Field_D	0.07	<0.02	-	<0.04#2	0.35	-	0.08	0.43	<0.1	<0.02	<0.02	<0.02	0.10	<0.02	0.03	0.03	<0.05	<0.02	<0.02	-	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
RPD (%)					33	0	-	0	19	-	67	7	0	0	0	0	11	0	0	0	0	0	0	-	0	0	0	0	0	0	0
MW570	10 Oct 2024	0207_MW570_D_241010	EB2432603	Normal	0.05	<0.02	-	<0.04#2	0.29	-	0.04	0.40	<0.2#2	<0.02	<0.02	<0.04#2	0.09	<0.02	<0.04#2	<0.04#2	<0.05	<0.02	<0.02	-	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW570	10 Oct 2024	0207_QC206_241010	1148785	Interlab_D	0.11	<0.01	<0.01	0.06#1	0.44#1	0.04	0.11#1	0.78#1	<0.05	<0.01	<0.01	0.03#1	0.20	<0.01	0.04#1	0.04	<0.01	<0.01	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RPD (%)					**75**	0	-	40	**41**	-	**93**	**64**	0	0	0	0	**76**	0	0	0	0	0	0	-	0	0	0	0	0	0	0
MW575	10 Oct 2024	0207_MW575_241010	EB2432603	Normal	0.47	<0.02	-	0.18	2.22	-	0.42	2.56	<0.1	<0.02	<0.02	0.11	0.66	<0.02	0.16	0.17	<0.05	<0.02	<0.02	-	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW575	10 Oct 2024	0207_QC105_241010	EB2432603	Field_D	0.46	<0.02	-	0.18	2.25	-	0.48	2.72	<0.2#2	<0.02	<0.02	0.11	0.65	<0.02	0.16	0.17	<0.05	<0.02	<0.02	-	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
RPD (%)					2	0	-	0	1	-	13	6	0	0	0	0	2	0	0	0	0	0	0	-	0	0	0	0	0	0	0
MW575	10 Oct 2024	0207_MW575_241010	EB2432603	Normal	0.47	<0.02	-	0.18	2.22	-	0.42	2.56	<0.1	<0.02	<0.02	0.11	0.66	<0.02	0.16	0.17	<0.05	<0.02	<0.02	-	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02
MW575	10 Oct 2024	0207_QC205_241010	1148785	Interlab_D	0.44	<0.01	<0.01	0.11#1	2.4#1	0.18	0.42#1	2.3#1	0.12	<0.01	<0.01	0.10#1	0.79	<0.01	0.14#1	0.19	<0.01	<0.01	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
RPD (%)					7	0	-	**48**	8	-	0	11	18	0	0	10	18	0	13	11	0	0	0	-	0	0	0	0	0	0	0

NOTE: RPDs have not been calculated for laboratory calculated analytes

Comments
#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#2 Reported Analyte LOR is higher than Requested Analyte LOR
#3 The LORs have been raised due to matrix interference

***RPDs have only been considered where a concentration is greater than 1 times the LOR.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 200 (1 - 10 x LOR); 30 (10 - 30 x LOR); 30 (> 30 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**

					PFAS - Fluorotelomer Sulfonic				PFAS - Sums				
					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)	PFAS (Sum of Total)	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of PFHxS and PFOS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR					0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01
Location	**Date**	**Field ID**	**Lab Report**	**Sample Type**									
MW038	01 Oct 2024	0207_MW038_241001	EB2432633	Normal	<0.05	<0.05	<0.05	<0.05	1.25	1.18	-	1.03	-
MW038	01 Oct 2024	0207_QC201_241001	EB2432633	Field_D	<0.05	<0.05	<0.05	<0.05	1.27	1.19	-	1.03	-
RPD (%)					0	0	0	0	-	-	-	-	-
MW038	01 Oct 2024	0207_MW038_241001	EB2432633	Normal	<0.05	<0.05	<0.05	<0.05	1.25	1.18	-	1.03	-
MW038	01 Oct 2024	0207_QC101_241001	EB2432633	Field_D	<0.05	<0.05	<0.05	<0.05	1.20	1.13	-	0.98	-
RPD (%)					0	0	0	0	-	-	-	-	-
MW178	09 Oct 2024	0207_MW178_241009	EB2432583	Normal	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-
MW178	09 Oct 2024	0207_QC103_241009	EB2432583	Field_D	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-
RPD (%)					0	0	0	0	-	-	-	-	-
MW178	09 Oct 2024	0207_MW178_241009	EB2432583	Normal	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	-
MW178	09 Oct 2024	0207_QC203_241009	1148776	Interlab_D	<0.01	<0.01	<0.05	<0.01	<0.1	<0.05	<0.01	0.01	0.01
RPD (%)					0	0	0	0	-	-	-	-	-
MW204	09 Oct 2024	0207_MW204_241009	EB2432583	Normal	<5.00[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	1,580	1,440	-	1,050	-
MW204	09 Oct 2024	0207_QC102_241009	EB2432583	Field_D	<5.00[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	1,540	1,380	-	1,020	-
RPD (%)					0	0	0	0	-	-	-	-	-
MW204	09 Oct 2024	0207_MW204_241009	EB2432583	Normal	<5.00[#2]	<5.00[#2]	<5.00[#2]	<5.00[#2]	1,580	1,440	-	1,050	-
MW204	09 Oct 2024	0207_QC202_241009	1148776	Interlab_D	<0.01	0.02	0.59	<0.01	1,715.87	1,494.59	346	1,090	1,136
RPD (%)					0	0	0	0	-	-	-	-	-
MW173	10 Oct 2024	0207_MW173_241010	EB2432583	Normal	<0.05	<0.05	0.71	<0.05	17.2	16.1	-	8.04	-
MW173	10 Oct 2024	0207_QC104_241010	EB2432583	Field_D	<0.05	<0.05	0.74	<0.05	12.6	11.7	-	5.60	-
RPD (%)					0	0	4	0	-	-	-	-	-
MW173	10 Oct 2024	0207_MW173_241010	EB2432583	Normal	<0.05	<0.05	0.71	<0.05	17.2	16.1	-	8.04	-
MW173	10 Oct 2024	0207_QC204_241010	1148776	Interlab_D	<0.01	<0.01	0.65	0.02	13.03	12.19	3.26	5.9	6.46
RPD (%)					0	0	9	0	-	-	-	-	-
MW570	10 Oct 2024	0207_MW570_D_241010	EB2432603	Normal	<0.05	<0.05	<0.05	<0.05	0.87	0.83	-	0.69	-
MW570	10 Oct 2024	0207_QC106_241010	EB2432603	Field_D	<0.05	<0.05	<0.05	<0.05	1.09	1.01	-	0.78	-
RPD (%)					0	0	0	0	-	-	-	-	-
MW570	10 Oct 2024	0207_MW570_D_241010	EB2432603	Normal	<0.05	<0.05	<0.05	<0.05	0.87	0.83	-	0.69	-
MW570	10 Oct 2024	0207_QC206_241010	1148785	Interlab_D	<0.01	<0.01	<0.05	<0.01	1.85	1.64	0.48	1.22	1.26
RPD (%)					0	0	0	0	-	-	-	-	-
MW575	10 Oct 2024	0207_MW575_241010	EB2432603	Normal	<0.05	<0.05	<0.05	<0.05	6.95	6.35	-	4.78	-
MW575	10 Oct 2024	0207_QC105_241010	EB2432603	Field_D	<0.05	<0.05	<0.05	<0.05	7.18	6.52	-	4.97	-
RPD (%)					0	0	0	0	-	-	-	-	-
MW575	10 Oct 2024	0207_MW575_241010	EB2432603	Normal	<0.05	<0.05	<0.05	<0.05	6.95	6.35	-	4.78	-
MW575	10 Oct 2024	0207_QC205_241010	1148785	Interlab_D	<0.01	<0.01	<0.05	<0.01	7.19	6.48	2.54	4.7	4.84
RPD (%)					0	0	0	0	-	-	-	-	-

NOTE: RPDs have not been calculated for laboratory calculated analytes

Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#2 Reported Analyte LOR is higher than Requested Analyte LOR
#3 The LORs have been raised due to matrix interference

***RPDs have only been considered where a concentration is greater than 1 times the LOR.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 200 (1 - 10 x LOR); 30 (10 - 30 x LOR); 30 (> 30 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**

				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer				PFAS - Sums		
				Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoro-n-hexadecanoic acid (PFHxDA)	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 (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	Perfluorooctane sulfonamide (FOSA)	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)	PFAS (Sum of Total)	PFAS (Sum of Total)(WA DER List)	Sum of PFHxS and PFOS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	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				0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.1	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.05	0.02	0.02	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.02	0.05	0.05	0.05	0.05	0.01	0.01	0.01
Date	**Field ID**	**Lab Report**	**Sample Type**																																		
20 Sep 2024	0207_QC401_240920	EB2432975	Field_B	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
01 Oct 2024	0207_QC301_241001	EB2432633	Rinsate	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
01 Oct 2024	0207_QC501_241001	EB2432633	Trip_B	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
08 Oct 2024	0207_QC302_241008	EB2432583	Rinsate	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
08 Oct 2024	0207_QC502_241008	EB2432583	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
09 Oct 2024	0207_QC303_241009	EB2432583	Rinsate	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
10 Oct 2024	0207_QC304_241010	EB2432583	Rinsate	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC305_241011	EB2432640	Rinsate	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC503_241011	EB2432603	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	-	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC504_241011	EB2432605	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC505_241011	EB2432615	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC506_241011	EB2432621	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC507_241011	EB2432638	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC508_241011	EB2432644	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC509_241011	EB2432640	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01
11 Oct 2024	0207_QC510_241011	EB2432643	Trip_B	<0.02	<0.02	-	<0.02	<0.01	-	<0.02	<0.01	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01

Appendix C

Analytical Data Validation

QA/QC Data Validation Report

Two primary decision error-types may occur due to uncertainties or limitations in the project data set. These are:

– Type (a) Error: An investigation area may be deemed to pose no unacceptable risk, when in fact it does. This may occur if contamination is 'missed' due to limitations in the sampling plan, or if the project analytical data set is unreliable.
– Type (b) Error: An investigation area may be deemed to pose an unacceptable risk, when in fact it does not. This may occur if the project analytical data set is unreliable, due to inappropriate sampling, sample handling, or analytical procedures. An assessment will be made as to the likelihood of a decision error being made based on the results of a QA/QC assessment and the closeness of the data to assessment criteria. Additionally, statistical methods can be utilised, where applicable, such as 95% upper confidence limit calculations.

To minimise the potential for decision errors, data quality indicators (DQIs) for completeness, comparability, representativeness, precision and accuracy have been used.

C-1 Data Quality Indicators

Data generated during this investigation must be appropriate to allow decisions to be made with confidence. Specific limits for this investigation have been adopted in accordance with guidance from the Australian Standard AS4482.1 which includes appropriate indicators of data quality (data quality indicators [DQIs]) used to assess quality assurance/quality control (QA/QC), and GHD's Standard Field Operating Procedures.

To assess the usability of the data prior to making decisions, the data were assessed against pre-determined DQIs. The DQIs including precision, accuracy, representativeness, comparability and completeness, were reviewed at the completion of the investigation works to assess for the presence of decision errors.

The pre-determined DQIs established for the investigation are discussed below and shown in Table C-1.

– **Precision** - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percentage Difference (RPD) of duplicate samples. RPDs are a quantitative measure of the accuracy of the analytical results and are calculated using the following formula, in accordance with the procedure described in *AS 4482.1 – 2005* (Standards Australia 2005):

$$RPD(\%) = \frac{|C_o - C_d|}{C_o + C_d} \times 200$$

Where Co = Analyte concentration of the original sample
Cd = Analyte concentration of the duplicate sample

The acceptance criteria used during this assessment was 30%. Where a result is below the LOR for one of the paired samples, the concentration assigned to that sample is the LOR. Where both sample concentrations were below ten times the LOR, the RPD was not assessed against the acceptance criteria.

– **Accuracy** - measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this investigation is a measure of the closeness of the analytical results obtained by a method to the 'true' (or standard) value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
– **Representativeness** - expresses the degree to which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.

– **Comparability** - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
– **Completeness** - is defined as the percentage of measurements made which are judged to be valid measurements.

Table C.1 Summary of quality assurance/quality control criteria

Data quality indicator	Frequency	Data quality acceptance criteria
Precision		
Field and inter-laboratory duplicates	1 per 10 samples	Where the sample result is: – <10 times the LOR, RPDs were not compared against acceptance criteria. – >10 times the LOR, RPDs up to 30% are acceptable.
NATA certification	All samples	All analysis should be undertaken by National Association of Testing Authorities (NATA) accredited laboratories.
Accuracy		
Surrogate spikes	All organic samples	50-150%
Laboratory control samples	1 per lab batch	<LOR
Matrix spikes	1 per lab batch	Acceptable limits for matrix spikes as per QC reports in Appendix D. Most relevant to this investigation are: – 65 – 140% for PFOS – 68 – 131% for PFHxS – 71 – 133% for PFOA
Trip blanks	1 per lab batch	<LOR
Field blanks	As required on new equipment	<LOR
Rinsate blanks	1 sample per piece of equipment per day	<LOR
Representativeness		
Sampling appropriate for media and analytes	All samples	All samples
Samples extracted and analysed within holding times	All samples	All samples
LORs appropriate and consistent[1]	All samples	All samples
Comparability		
Consistent field conditions, sampling staff and laboratory analysis	All samples	All samples
Standard operating procedures for sample collection & handling	All samples	All samples
Standard analytical methods used for all analyses	All samples	All samples
Completeness		
Sample description and COCs completed and appropriate	All samples	All samples
Appropriate documentation	All samples	All samples
Satisfactory frequency and result for QA/QC samples	All QA/QC samples	All samples

Data quality indicator	Frequency	Data quality acceptance criteria
Data from critical samples is considered valid	-	Critical samples valid
Acronyms COC: Chain of Custody LOR: Limit of Reporting RPD: Relative Percent Difference QA/QC: Quality assurance / quality control		

Table notes: 1 = The 99% species protection level has been applied for high value conservation systems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. It is proposed that the laboratory LOR is adopted for the purposes of preliminary screening of analytical water results, rather than sole use of the criteria value.

If any of the DQIs were not met, further investigation was necessary to determine whether the non-conformance significantly affected the usefulness of the data.

C-2 Field quality assurance and quality control

The QA/QC procedures are based on NEPM Schedule B2 (NEPC 2013) and relevant Australian Standards.

QA involves all the actions, procedures, checks and decisions undertaken to ensure the representativeness and integrity of samples and accuracy and reliability of analytical results (NEPC 2013). QC involves protocols to monitor and measure the effectiveness of QA procedures.

Fieldwork was conducted with reference to the Australian Standards and GHD's Standard Field Operating Procedures which ensure all samples are collected by a set of uniform and systematic methods, as required by GHD's QA system. Key requirements of these procedures are listed below:

– Appropriately trained and experienced staff conducted and documented site activities using photographs and notes on standard field forms such as daily site records and sampling logs.
– Decontamination procedures – including the use of new disposable gloves for the collection of each sample and the use of dedicated sampling containers provided by the laboratory.
– Logging procedures – all samples were described using a recognised system.
– Sample identification procedures - samples were immediately transferred to sample containers of appropriate composition and preservation for the required laboratory analysis. All sample containers were clearly labelled with a sample number, job number, and sample date. The sample containers were then transferred to a chilled insulated container for sample preservation prior to and during shipment to the analytical laboratory.
– Chain of custody information requirements - a chain of custody form was completed and forwarded to the testing laboratory with the samples.
– Field duplicate and blank sample frequency was followed where applicable.
– Calibration procedures – all equipment was appropriately calibrated.

C-3 Sampling and analysis quality control

The QC samples collected during the investigation align with those prescribed in the SAQP (AECOM, 2024) and SAQP Addendum (GHD, 2024). These are described below:

– **Field duplicates:** Comprised collecting a duplicate sample side by side with the primary sample. Both samples were sent anonymously to the project laboratory (ALS). Field duplicates may provide an indication of the analytical precision of the laboratory but are inherently influenced by other factors such as sampling techniques and sample media heterogeneity. Side by side samples should reflect matrix heterogeneity and give larger RPDs than random splits or splits of homogenised material, particularly in the case of a heterogeneous matrix and PFAS which absorbs preferentially to organic carbon, clay and iron.
– **Inter-laboratory duplicates:** Identical to a blind duplicate, except that the primary sample was sent to the primary project laboratory and the duplicate was sent to a secondary (check) laboratory (Eurofins). Inter-laboratory duplicates provide an indication of the repeatability of the results between laboratories.

- **Rinsate blanks:** Final rinse water used in the decontamination of sampling equipment is collected and submitted for analysis. Rinsate blanks provide an indication of efficiency of the decontamination methodology and techniques employed in the decontamination of sampling equipment between each sampling event and are an indicator of potential cross contamination between sampling locations. Rinsate samples were only collected from non-disposable sampling equipment.
- **Trip blanks:** Trip blank samples are provided by the laboratory prefilled with deionised water. Trip blank samples are used to estimate the amount of contamination introduced during the transport and storage of samples from the time of sampling to the time of analysis.
- **Field blanks:** Field blanks are field prepared samples using laboratory supplied de-ionised water, which are collected off new equipment to determine whether such equipment contains PFAS that may impact sample results.

C-4 Laboratory quality assurance and quality control

Laboratory methods used by the primary laboratory were suitable for environmental contaminant analysis and are based on established internationally recognised procedures such as those published by the United States Environmental Protection Agency, American Public Health Association, AS and National Environment Protection (Assessment of Site Contamination) Measure (NEPM).

The individual testing laboratories conducted an assessment of the laboratory QC program however the results were also independently reviewed and assessed internally by GHD. Recovery targets below are defined in the ALS and Eurofins QA/QC section of the certificates of analysis reports. All laboratory QA/QC results are documented with the laboratory certificates of analysis in Appendix D.

C-4-1 Laboratory quality control procedures

Laboratory QC samples incorporated in the analytical process include:

Laboratory blind duplicate samples

A laboratory blind duplicate provides data on the analytical precision and reproducibility of the analytical result. The laboratory blind duplicate is created by sub sampling from one of the primary samples submitted for analysis. Laboratory blind duplicates are analysed at a rate equivalent to one in twenty samples per analytical batch, or one sample per batch if less than twenty samples are analysed in a batch.

The permitted ranges for the RPD of laboratory blind duplicates are dependent on the magnitude of the results in comparison to the level of reporting as shown in Table C.2.

Table C.2 Permitted laboratory blind duplicate relative percentage difference (RPD) ranges

Magnitude of result	Permitted RPD range
< 10 x LOR	0% - 70%
10 – 20 x LOR	0% - 50%
> 20 x LOR	0% - 30%

Matrix spike recoveries

Matrix spike sample analysis is the analysis of one or more replicate portions of samples from the batch, after fortifying the additional portion(s) with known quantities of the analyte(s) of interest. The percentage recovery of target analyte(s) from matrix spike samples is used to assess the bias of the method in the specific sample matrix. Recoveries must lie between 70% and 130%.

Laboratory control sample

The laboratory control sample (LCS) analysis of either a reference material or a control matrix fortified with analytes representative of the analyte class. The purpose of LCS is to monitor method precision and accuracy independent of the sample matrix. Typically, the percentage recovery of the LCS is compared to the dynamic recovery limit based on the statistical analysis of the processed LCS analysis. The Eurofins and ALS acceptance criteria, indicates recoveries must lie between 70% and 130%, unless otherwise stated.

Surrogate spike recoveries

Surrogate Spikes provide a means of checking that no gross errors have occurred during any stage of the analytical method leading to significant analyte loss. Surrogate recoveries are similar to the analyte of interest in terms of chemical composition, extractability, and chromatographic conditions (retention time), but which are not normally found in environmental samples. Surrogate compounds are spiked into blanks, standards and samples submitted for organic analyses by gas-chromatographic techniques prior to sample extraction. Recoveries must lie between 50% and 150% for all analytes.

Method blank samples

Method or analysis blank sample analysis is the analysis of a sample that is as free as possible of the analytes of interest but has been prepared the same manner as the samples under investigation. The analysis is to ascertain if laboratory reagent, glassware and other laboratory consumables contribute to the observed concentration of analytes in the process batch. If below the maximum acceptable method blank (20% of the practical quantification limit), the contribution is subtracted from the gross analytical signal for each analysis before calculating the sample analyte concentration. The method blank should return analyte concentrations as 'not detected'.

The individual testing laboratory conducted an assessment of the laboratory QC program internally. However, the results were also independently reviewed and assessed by GHD.

C-5 Analytical QA/QC Summary

Laboratory reports (Appendix D) that were used in this QA/QC assessment include:

ALS – EB2432583, EB2432603, EB24232605, EB2432615, EB2432621, EB2432633, EB2432638, EB2432640, EB2432643, EB2432644, EB2432975.

Eurofins – 1148776, 1148785.

1. Field QA/QC	Samples
Number of Primary Samples Analysed	56 primary water samples
Number of Days Sampling	5 days of sampling in total and a total of 10 laboratory batches from the following dates: – 1/10/2024 – 8/10/2024 – 9/10/2024 – 10/20/2024 – 11/10/2024

Number and type of QA/QC Samples analysed:

Item	Recommended sampling rate	Actual rate	Comments
Duplicates	1 in 10 samples	6	Duplicates were collected at a rate of 11%, which met the recommended rate (10%).
Triplicates	1 in 10 samples	6	Triplicates were collected at a rate of 11%, which met the recommended rate (10%).
Rinsate Blanks	1/equipment/day	5	Rinsate blanks were sampled from an interface probe once per day of sampling, which met the recommended rate.
Trip Blanks	1/batch	10	Trip blanks were collected once per batch, which met the recommended rate.
Field Blanks	1/new equipment	1	Field blank collected off new Hydrasleeve™ weight prior to deployment.

2. Sample Handling	Yes	No	NA	Comments
Were the sample holding times met?	x			All samples were provided to the lab with adequate time to commence analysis in accordance with relevant holding times.
Were the samples in proper custody between the field and reaching this laboratory?	X			
Were the samples properly and adequately preserved?	X			Sample preservation was adequately achieved in all samples over the program.
Did the laboratory receive the samples in good condition?	X			The laboratory received samples in good condition. In EB2432583, MW187 was reportedly not received at the laboratory.
3. Precision/Accuracy Assessment	**Yes**	**No**	**NA**	**Comments**
Was a NATA registered laboratory used?	X			ALS (primary) Eurofins (secondary)
Did the laboratory perform the requested tests?	X			
Were the laboratory methods adopted NATA endorsed?	X			
Were the appropriate test procedures followed?	X			
Were the reporting limits satisfactory?	X			In lab report EB2432583 the LORs for particular samples and particular analytes were adjusted due to matrix interference or high-level contaminants requiring dilution. In lab report EB2432603 the LORs for particular analytes in 0207_MW568_241008 were raised due to matrix interference. In lab report EB2432603 the LORs for particular samples were adjusted due to matrix interference or suppression of particular internal standards. In lab report EB2432605 the LOR for PFBS in 0207_MW257_241009 was raised due to matrix interference. In lab report EB2432605 the LORs for 0207_MW276_241009 were adjusted due to high-level contaminants requiring dilution. In lab report EB2432644 the LORs for particular analytes in 0207_MW269_241009 were raised due to matrix interference. In the lab report 1148776 the LORs for PFNS and PFDS in 0207_QC202_241009 were raised due to matrix interference.
Was the NATA Seal on the reports?	X			
Did an authorised person sign the reports?	X			

4. Field duplicates	Yes	No	NA	Comments
Were an Adequate Number of intra and inter-laboratory field duplicates analysed?	X			Intra-laboratory duplicates were collected at a rate of 11%, which met the recommended rate. Inter-laboratory duplicates were collected at a rate of 11%, which met the recommended rate.
Were RPDs within control limits (30%)?		X		RPDs above the acceptance criteria were recorded in the following samples for the following analytes: – 0207_MW204_241009 and its inter-laboratory duplicate 0207_QC202_241009: PFHpS (34%) – 0207_MW173_241010 and its intra-laboratory duplicate 0207_QC104_241010: PFHpS (42%), PFOS (36%), PFPeS (33%), PFHxS (35%), PFBA (40%), PFOA (34%), PFPeA (46%) – 0207_MW173_241010 and its inter-laboratory duplicate 0207_QC204_241010: PFHpS (60%), PFOS (43%), PDPeS (33%), PFHpA (34%), PFNA (48%), PFOA (39%), PFPeA (38%) – 0207_MW570_D_241010 and inter-laboratory duplicate 0207_QC206_241010: PFBS (75%), PFOS (41%), PFPeS (93%), PFHxS (64%), PFHxA (76%) – 0207_MW575_241010 and its inter-laboratory duplicate 0207_QC205_241010: PFHpS (48%) For the majority of RPD exceedances, the primary and duplicate/triplicate results are in the same order of magnitude and the discrepancy is unlikely to have material impact on the results. Exceedances were mainly associated with inter-laboratory duplicates, indicating that differences may be due to discrepancies in sampling methods between laboratories.
5. Trip Blanks/Rinsate Blanks/Field Blanks	**Yes**	**No**	**NA**	**Comments**
Were an adequate number of trip blanks analysed?	X			In accordance with the SAQP Addendum (GHD, 2024), one trip blank was collected per laboratory batch.
Were an adequate number of rinsate blanks analysed?	X			Rinsate blanks were collected once per day of sampling off the interface probe used during sampling.
Were an adequate number of field blanks analysed?	X			One field blank was collected off new Hydrasleeve™ weight prior to deployment.
Were the trip blanks free of contamination?	X			All trip blank results were below the LOR, indicating that no contamination occurred during transport and handling.
Were the rinsate blanks free of contaminants?	X			All rinsate results were below the LOR, indicating that no cross contamination occurred from sampling equipment and procedures.
Were the field blanks free of contaminants?	X			The field blank results were below the LOR, indicating that the Hydrasleeve™ weights are not a source of PFAS and unlikely to impact sample results.

6. Laboratory Internal Quality Control Procedures	Yes	No	Comments
Were the frequency of quality control samples in accordance with NEPM 2013?		X	Laboratory duplicate sample frequency for PFAS was not within the quality control specification of NEPM 2013 B3 & ALS QC Standard for PFAS in laboratory reports: – EB2432583 – EB2432603 – EB2432605 – EB2432615 – EB2432621 – EB2432638 – EB2432640 – EB2432643 – EB2432644 – EB2432975 Matrix spike quality control frequency for PFAS was not within specification of NEPM 2013 B3 & ALS QC Standard in lab reports: – EB2432583 – EB2432975 While the laboratory instructions were followed by GHD field staff, the laboratory failed to batch the samples appropriately to meet the QC requirements and these outliers are currently being investigated by the laboratory.
Were the method blanks free of contamination?		X	All method blanks had results below the acceptable limit of 0.05 µg/L, with the exception of PFHxDA in laboratory report EB2432583 (0.08 µg/L).
Were the spike recoveries within control limits?		X	Laboratory control spike recoveries were generally acceptable in the vast majority of sampling undertaken. They were outside the recommended criteria in the following laboratory reports: EB2432583 – MeFOSA (55%), EtFOSE (51%) EB2432603 – PFDS (184%), PFTeDA (147%) Matrix spike recoveries were outside the recommended criteria in the following laboratory reports: EB2432603 – PFPeS (63%), PFHxS (24.4%) Matrix spike recoveries were not determined in the following laboratory reports: EB2432583 – PFBS, PFPeS, PFHxS, PFHxA For these samples background levels were greater than or equal to 4 times the spike level.
Were the RPDs of the laboratory duplicates within control limits?		X	The following RPDs were within the Global RPD Duplicates Acceptance Criteria of 30% but outside the Eurofins acceptance criteria: EB2432603 – PFHxS (22%), PFHxA (29%) Overall, these discrepancies are not considered likely to affect the outcome of the assessment or the reliability of the results.
Were the surrogate recoveries within control limits?	X		All surrogate recoveries were within the laboratory control limits.

C-6 Evaluation summary

An evaluation of the overall QA/QC program is provided in Table C-3. Overall, it is considered that the QA/QC results indicate that the data collected as part of this project were valid and of sufficient quality to meet the DQOs specified in the validation report.

Table C.3 Summary and final assessment of QA/QC results

QC parameters	Satisfactory	Partially Satisfactory	Unsatisfactory	Comments and DQI assessment
Field QA/QC sample collection	✓			The collection of intra-laboratory duplicates, triplicates, field blanks, rinsate blanks and trip blanks met the recommended rates.
Sample Handling	✓			All samples were analysed during the required holding times and results of trip blank, field blank and rinsate samples indicated a minimal likelihood of cross contamination.
Precision/ Accuracy assessment	✓			Overall precision/accuracy is considered satisfactory, taking into account comments on minor QA discrepancies noted in the laboratory reports.
Field QA/QC assessment		✓		Duplicate sampling was conducted at or above the recommended rates. RPD exceedances were mainly associated with inter-laboratory duplicates, indicating that differences may be due to discrepancies in sampling methods between laboratories. For the majority of RPD exceedances, the primary and duplicate results are the same order of magnitude, and the discrepancies are unlikely to have material impact on the results. Trip blanks, rinsates and field blanks were collected at the recommended rate and are considered adequate to make an assessment of overall cross-contamination during transport.
Laboratory Internal QA/QC	✓			Some QC samples were noted to have duplicate RPD, laboratory control spike and matrix spike results outside of recommended criteria. Given the small number, these exceedances are not considered to affect the quality of laboratory data assessed.
Data Usability			**Comments**	
Data Usable with the following qualifications		✓	The collection of intra-laboratory duplicates, triplicates, field blanks, rinsate blanks and trip blanks met the recommended rates. Therefore, there is considered to be sufficient QA/QC data to assess the suitability of the data to meet the DQOs provided. The following data quality qualification should be taken into account: – For the majority of RPD exceedances, the primary and duplicate results are the same order of magnitude, and the discrepancies are unlikely to have any material impact on the results.	

QA/QC Report Prepared by: [redacted]

QA/QC Report Checked by: [redacted]

Appendix D

Laboratory documents

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432583**	Page	: 1 of 19
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 24-Oct-2024 09:54
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
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]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: Particular samples required dilutions prior to extraction due to high-level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples required dilutions prior to analysis due to matrix interference. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR for particular analytes have been raised due to matrix interference.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standard recovery less than 50% and greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: Whole bottle extraction was not possible for particular samples. Samples required dilutions prior to extraction due to high-level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR of particular analytes for particular samples have been raised due to sample matrix interferences (Internal Standard Suppression).
- 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	0207_MW167_241009	0207_MW172_241010	0207_MW173_241010	0207_MW174_241009	0207_MW178_241009
			Sampling date / time	09-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432583-001	EB2432583-002	EB2432583-003	EB2432583-004	EB2432583-005
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.54**	**0.56**	**0.46**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.54**	**0.57**	**0.56**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**2.51**	**3.07**	**3.88**	**0.02**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.26**	**0.20**	**0.26**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**4.86**	**5.56**	**4.16**	**0.04**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.05	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.2**	**1.0**	**0.6**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.33**	**4.79**	**2.21**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**1.21**	**1.85**	**2.31**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.17**	**0.86**	**0.96**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.34**	**0.66**	**0.83**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	**0.07**	**0.18**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.05	**0.04**	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.05	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.05	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.05	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.12	<0.05	<0.05	<0.05
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	<0.12	<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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW167_241009	0207_MW172_241010	0207_MW173_241010	0207_MW174_241009	0207_MW178_241009
				Sampling date / time	09-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432583-001	EB2432583-002	EB2432583-003	EB2432583-004	EB2432583-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.12	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.05	<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		**0.06**	**1.49**	**0.71**	**0.09**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	**0.29**	<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		**11.0**	**21.0**	**17.2**	**0.15**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**7.37**	**8.63**	**8.04**	**0.06**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**10.2**	**20.1**	**16.1**	**0.15**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**102**	**103**	**101**	**107**
13C8-PFOA	----	0.02	%		**104**	**103**	**105**	**103**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0207_MW179_241009	0207_MW189_241009	0207_MW193_241010	0207_MW198_241010	0207_MW201_241009
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432583-006	EB2432583-008	EB2432583-009	EB2432583-010	EB2432583-011
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.48**	<0.02	**2.49**	**0.51**	**10.6**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.43**	**0.02**	**2.78**	**0.58**	**12.0**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**2.13**	**0.10**	**15.9**	**4.55**	**73.8**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.24**	<0.02	**0.98**	**0.68**	**5.77**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**3.45**	**0.09**	**9.64**	**13.6**	**15.1**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.05	<0.05	<0.10
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.2**	<0.1	**9.0**	**0.4**	**2.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.30**	<0.02	**1.88**	**0.92**	**4.00**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**1.33**	**0.02**	**6.22**	**1.74**	**17.3**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.20**	<0.02	**1.42**	**0.44**	**2.31**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.34**	<0.01	**2.05**	**0.78**	**5.62**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.05	<0.05	<0.10
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.05	<0.05	<0.10
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.05	<0.05	<0.10
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.05	<0.05	<0.10
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.05	<0.05	<0.10
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.12	<0.12	<0.24
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	<0.05	<0.12	<0.12	<0.24
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.05	<0.05	<0.10

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW179_241009	0207_MW189_241009	0207_MW193_241010	0207_MW198_241010	0207_MW201_241009
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432583-006	EB2432583-008	EB2432583-009	EB2432583-010	EB2432583-011
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.12	<0.12	<0.24
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.12	<0.24
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.12	<0.12	<0.24
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.12	<0.24
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	<0.10
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.05	<0.10
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	<0.10
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.14**	**0.06**	**0.07**	**0.51**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**9.10**	**0.37**	**52.4**	**24.3**	**149**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**5.58**	**0.19**	**25.5**	**18.2**	**88.9**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**8.43**	**0.35**	**48.7**	**23.0**	**132**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**104**	**107**	**102**	**101**	**101**
13C8-PFOA	----	0.02	%		**104**	**105**	**103**	**103**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0207_MW202_241009	0207_MW203_241009	0207_MW204_241009	0207_MW205_241009	0207_MW207_241010
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432583-012	EB2432583-013	EB2432583-014	EB2432583-015	EB2432583-016
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**2.94**	**1.00**	**116**	**2.20**	**0.18**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**3.90**	**0.86**	**111**	**2.16**	**0.17**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**35.4**	**4.41**	**712**	**10.7**	**1.21**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**2.35**	**0.09**	**37.5**	<0.26	<0.06
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**168**	**0.67**	**338**	**2.98**	**0.84**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.42	<0.02	<5.00	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<2.1	**0.2**	**28.5**	**0.5**	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**1.68**	**0.40**	**33.0**	**0.96**	**0.06**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**7.43**	**1.38**	**146**	**3.33**	**0.16**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**1.13**	**0.14**	**21.0**	**0.31**	**0.05**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**3.44**	**0.11**	**41.0**	**0.27**	**0.05**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.42	<0.02	<5.00	<0.05	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.42	<0.02	<5.00	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.42	<0.02	<5.00	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.42	<0.02	<5.00	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.42	<0.02	<5.00	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<1.05	<0.05	<12.5	<0.13	<0.05
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<1.05	<0.05	<12.5	<0.13	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<4.20	<0.02	<5.00	<0.05	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW202_241009	0207_MW203_241009	0207_MW204_241009	0207_MW205_241009	0207_MW207_241010
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432583-012	EB2432583-013	EB2432583-014	EB2432583-015	EB2432583-016
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<1.05	<0.05	<12.5	<0.13	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<1.05	<0.05	<12.5	<0.13	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<1.05	<0.05	<12.5	<0.13	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<1.05	<0.05	<12.5	<0.13	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.42	<0.02	<5.00	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.42	<0.02	<5.00	<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		<0.42	<0.05	<5.00	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.46**	<0.05	<5.00	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.42	<0.05	<5.00	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.42	<0.05	<5.00	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**227**	**9.26**	**1580**	**23.4**	**2.72**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**203**	**5.08**	**1050**	**13.7**	**2.05**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**220**	**8.31**	**1440**	**21.2**	**2.55**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.6**	**110**	**90.6**	**89.5**	**106**
13C8-PFOA	----	0.02	%		**102**	**106**	**92.4**	**92.0**	**94.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0207_MW221_241009	0207_MW229_241009	0207_MW230_241009	0207_MW233_241010	0207_MW235_241010
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432583-017	EB2432583-020	EB2432583-021	EB2432583-023	EB2432583-024
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**0.36**	**1.07**	**0.50**	**0.09**	**7.13**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**0.36**	<0.89	**0.52**	**0.07**	**4.64**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**1.95**	**11.3**	**3.07**	**0.46**	**9.81**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	**0.15**	<0.89	**0.20**	<0.04	<0.48
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**2.04**	**49.5**	**4.20**	**0.29**	**3.39**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.09	<0.02	<0.02	<0.05
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.2	<4.5	**2.1**	<0.2	**1.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.26**	<0.89	**7.90**	<0.04	**2.03**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**0.80**	**2.77**	**5.86**	**0.11**	**9.14**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.20**	<0.89	**4.33**	<0.04	**0.37**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.32**	<0.89	**2.90**	<0.04	**0.29**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.04	<0.09	**1.01**	<0.02	<0.05
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.09	**0.04**	<0.02	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.09	<0.02	<0.02	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.09	<0.02	<0.02	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.09	<0.02	<0.02	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.22	<0.05	<0.05	<0.12
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	<0.22	<0.05	<0.05	<0.12
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.09	<0.04	<0.02	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW221_241009	0207_MW229_241009	0207_MW230_241009	0207_MW233_241010	0207_MW235_241010
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432583-017	EB2432583-020	EB2432583-021	EB2432583-023	EB2432583-024
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.22	<0.05	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.22	<0.05	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.22	<0.05	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.22	<0.05	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.09	<0.02	<0.02	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.09	<0.02	<0.02	<0.05
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.09	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.09	1.17	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.09	0.14	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.09	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		6.44	64.6	33.9	1.02	38.1
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		3.99	60.8	7.27	0.75	13.2
Sum of PFAS (WA DER List)	----	0.01	µg/L		5.93	64.6	32.2	0.95	33.5
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		90.6	100	87.4	76.8	82.1
13C8-PFOA	----	0.02	%		92.8	94.2	87.0	95.2	91.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0207_MW236_241010	0207_MW241_241010	0207_MW245_241008	0207_MW249_241010	0207_MW252_241010
			Sampling date / time	10-Oct-2024 00:00	10-Oct-2024 00:00	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432583-025	EB2432583-026	EB2432583-029	EB2432583-030	EB2432583-031
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**2.82**	<0.22	**0.04**	**1.12**	**2.48**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**2.31**	**0.14**	<0.04	**1.12**	**2.12**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**12.4**	**0.98**	**0.20**	**4.05**	**11.1**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.46	**0.06**	<0.04	**0.05**	<0.88
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**4.63**	**4.86**	**0.10**	**0.22**	**49.5**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.09
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<2.3	<0.1	<0.2	**0.4**	<4.4
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**0.60**	**0.06**	<0.04	**0.38**	**1.15**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**4.40**	**0.16**	**0.06**	**1.61**	**3.27**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**0.46**	**0.03**	<0.04	**0.19**	<0.88
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**0.83**	**0.08**	<0.04	**0.08**	<0.88
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.88
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.09
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.09
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.09
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.09
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.12	<0.05	<0.05	<0.05	<0.22
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.12	<0.05	<0.05	<0.05	<0.22
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.05	<0.02	<0.02	<0.02	<0.09

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW236_241010	0207_MW241_241010	0207_MW245_241008	0207_MW249_241010	0207_MW252_241010
				Sampling date / time	10-Oct-2024 00:00	10-Oct-2024 00:00	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432583-025	EB2432583-026	EB2432583-029	EB2432583-030	EB2432583-031
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.22
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.22
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.22
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.22
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.09
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.09
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	<0.09
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.46	<0.05	<0.05	<0.05	<0.09
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.09
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.09
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**28.4**	**6.37**	**0.40**	**9.45**	**69.6**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**17.0**	**5.84**	**0.30**	**4.50**	**60.6**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**26.1**	**6.17**	**0.40**	**8.28**	**67.5**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.7**	**95.8**	**77.9**	**77.5**	**84.5**
13C8-PFOA	----	0.02	%		**89.2**	**92.5**	**86.1**	**85.5**	**89.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0207_MW299_241010	0207_MW300_241010	0207_MW562_241010	0207_MW563_241010	0207_QC102_241009
			Sampling date / time	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432583-032	EB2432583-033	EB2432583-034	EB2432583-035	EB2432583-036
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	**4.20**	**3.90**	**4.69**	**0.13**	**120**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	**3.32**	**4.43**	**4.48**	**0.08**	**122**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**11.7**	**24.4**	**22.0**	**0.27**	**712**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.49	**2.82**	<0.93	<0.04	**40.5**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**12.1**	**43.9**	**1.20**	**0.05**	**310**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.09	<0.09	<0.02	<5.00
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	**0.8**	**1.2**	**1.1**	<0.1	<250
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	**1.44**	**2.05**	**1.71**	**0.10**	**32.5**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	**6.98**	**7.84**	**6.06**	**0.19**	**142**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	**1.41**	**1.69**	**0.85**	<0.02	**21.5**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	**1.70**	**4.40**	**1.07**	**0.03**	**39.5**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.05	<0.09	<0.09	<0.02	<5.00
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.05	<0.09	<0.09	<0.02	<5.00
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.09	<0.09	<0.02	<5.00
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.09	<0.09	<0.02	<5.00
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.09	<0.09	<0.02	<5.00
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.12	<0.22	<0.23	<0.05	<12.5
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.12	<0.22	<0.23	<0.05	<12.5
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.05	<0.09	<0.09	<0.02	<5.00

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW299_241010	0207_MW300_241010	0207_MW562_241010	0207_MW563_241010	0207_QC102_241009
				Sampling date / time	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	09-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432583-032	EB2432583-033	EB2432583-034	EB2432583-035	EB2432583-036
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.22	<0.23	<0.05	<12.5
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.22	<0.23	<0.05	<12.5
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.22	<0.23	<0.05	<12.5
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.22	<0.23	<0.05	<12.5
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.09	<0.09	<0.02	<5.00
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<0.09	<0.09	<0.02	<5.00
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.09	<0.09	<0.05	<5.00
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.08**	<0.90	**0.16**	<0.05	<5.00
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.09	<0.09	<0.05	<5.00
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.09	<0.09	<0.05	<5.00
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**43.7**	**96.6**	**43.3**	**0.87**	**1540**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**23.8**	**68.3**	**23.2**	**0.34**	**1020**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**40.4**	**89.4**	**38.8**	**0.79**	**1380**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**82.3**	**93.6**	**82.0**	**97.2**	**86.9**
13C8-PFOA	----	0.02	%		**89.9**	**86.8**	**91.3**	**88.5**	**89.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0207_QC103_241009	0207_QC104_241010	0207_QC302_241008	0207_QC303_241009	0207_QC304_241010
			Sampling date / time	09-Oct-2024 00:00	10-Oct-2024 00:00	08-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432583-037	EB2432583-038	EB2432583-039	EB2432583-040	EB2432583-041
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	**0.42**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.40**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	**2.72**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.17**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	**2.88**	<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	**0.4**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	**1.39**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**1.76**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.77**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**0.59**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	**0.14**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	**0.03**	<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
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC103_241009	0207_QC104_241010	0207_QC302_241008	0207_QC303_241009	0207_QC304_241010
				Sampling date / time	09-Oct-2024 00:00	10-Oct-2024 00:00	08-Oct-2024 00:00	09-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432583-037	EB2432583-038	EB2432583-039	EB2432583-040	EB2432583-041
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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
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	**0.74**	<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	**12.6**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**5.60**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**11.7**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**84.4**	**95.9**	**92.5**	**97.1**	**89.3**
13C8-PFOA	----	0.02	%		**90.3**	**94.0**	**92.6**	**99.2**	**93.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC502_241008 Trip Blank	----	----	----	----
				Sampling date / time	08-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2432583-042	--------	--------	--------	--------
					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	----	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC502_241008 Trip Blank	----	----	----	----
				Sampling date / time	08-Oct-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2432583-042	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
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	%		**95.7**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.9**	----	----	----	----

Surrogate Control Limits

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432583**	Page	: 1 of 9
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 24-Oct-2024
Sampler	: [redacted]	No. of samples received	: 36
Order number	: ----	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 Duplicate outliers occur.**
- **Method Blank value outliers exist - please see following pages for full details.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, 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
Method Blank (MB) Values							
EP231B: Perfluoroalkyl Carboxylic Acids	QC-6119481-001	----	**Perfluorohexadecanoic acid (PFHxDA)**	67905-19-5	0.08 µg/L	0.05 µg/L	**Blank result exceeds permitted value**
Laboratory Control Spike (LCS) Recoveries							
EP231C: Perfluoroalkyl Sulfonamides	QC-6119481-002	----	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	31506-32-8	55.2 %	68.0-141%	**Recovery less than lower control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-6119481-002	----	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	51.4 %	60.5-138%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2432583--030	0207_MW249_241010	**Perfluorobutane sulfonic acid (PFBS)**	375-73-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2432583--030	0207_MW249_241010	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2432583--030	0207_MW249_241010	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2432583--030	0207_MW249_241010	**Perfluorohexanoic acid (PFHxA)**	307-24-4	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
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	57	7.02	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	57	3.51	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)								
0207_QC302_241008,	0207_QC502_241008 - Trip Blank	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**17-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW245_241008		**08-Oct-2024**	**18-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW167_241009,	0207_MW174_241009,	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW178_241009,	0207_MW179_241009,							
0207_MW189_241009,	0207_MW201_241009,							
0207_MW202_241009,	0207_MW203_241009							
HDPE (no PTFE) (EP231X)								
0207_QC303_241009		**09-Oct-2024**	**17-Oct-2024**	07-Apr-2025	✓	**17-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW204_241009,	0207_MW205_241009,	**09-Oct-2024**	**18-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW221_241009,	0207_MW229_241009,							
0207_MW230_241009,	0207_QC102_241009,							
0207_QC103_241009								
HDPE (no PTFE) (EP231X)								
0207_MW172_241010,	0207_MW173_241010,	**10-Oct-2024**	**16-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW193_241010,	0207_MW198_241010							
HDPE (no PTFE) (EP231X)								
0207_QC104_241010,	0207_QC304_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**17-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW207_241010,	0207_MW233_241010,	**10-Oct-2024**	**18-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW235_241010,	0207_MW236_241010,							
0207_MW241_241010,	0207_MW249_241010,							
0207_MW252_241010,	0207_MW299_241010,							
0207_MW300_241010,	0207_MW562_241010,							
0207_MW563_241010								

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)								
0207_QC302_241008,	0207_QC502_241008 - Trip Blank	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**17-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW245_241008		**08-Oct-2024**	**18-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW167_241009,	0207_MW174_241009,	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW178_241009,	0207_MW179_241009,							
0207_MW189_241009,	0207_MW201_241009,							
0207_MW202_241009,	0207_MW203_241009							
HDPE (no PTFE) (EP231X)								
0207_QC303_241009		**09-Oct-2024**	**17-Oct-2024**	07-Apr-2025	✓	**17-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW204_241009,	0207_MW205_241009,	**09-Oct-2024**	**18-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW221_241009,	0207_MW229_241009,							
0207_MW230_241009,	0207_QC102_241009,							
0207_QC103_241009								
HDPE (no PTFE) (EP231X)								
0207_MW172_241010,	0207_MW173_241010,	**10-Oct-2024**	**16-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW193_241010,	0207_MW198_241010							
HDPE (no PTFE) (EP231X)								
0207_QC104_241010,	0207_QC304_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**17-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW207_241010,	0207_MW233_241010,	**10-Oct-2024**	**18-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW235_241010,	0207_MW236_241010,							
0207_MW241_241010,	0207_MW249_241010,							
0207_MW252_241010,	0207_MW299_241010,							
0207_MW300_241010,	0207_MW562_241010,							
0207_MW563_241010								

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) 0207_QC302_241008, 0207_QC502_241008 - Trip Blank	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**17-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW245_241008	**08-Oct-2024**	**18-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW167_241009, 0207_MW174_241009, 0207_MW178_241009, 0207_MW179_241009, 0207_MW189_241009, 0207_MW201_241009, 0207_MW202_241009, 0207_MW203_241009	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC303_241009	**09-Oct-2024**	**17-Oct-2024**	07-Apr-2025	✓	**17-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW204_241009, 0207_MW205_241009, 0207_MW221_241009, 0207_MW229_241009, 0207_MW230_241009, 0207_QC102_241009, 0207_QC103_241009	**09-Oct-2024**	**18-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW172_241010, 0207_MW173_241010, 0207_MW193_241010, 0207_MW198_241010	**10-Oct-2024**	**16-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC104_241010, 0207_QC304_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**17-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW207_241010, 0207_MW233_241010, 0207_MW235_241010, 0207_MW236_241010, 0207_MW241_241010, 0207_MW249_241010, 0207_MW252_241010, 0207_MW299_241010, 0207_MW300_241010, 0207_MW562_241010, 0207_MW563_241010	**10-Oct-2024**	**18-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓

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)								
0207_QC302_241008,	0207_QC502_241008 - Trip Blank	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**17-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW245_241008		**08-Oct-2024**	**18-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW167_241009,	0207_MW174_241009,	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW178_241009,	0207_MW179_241009,							
0207_MW189_241009,	0207_MW201_241009,							
0207_MW202_241009,	0207_MW203_241009							
HDPE (no PTFE) (EP231X)								
0207_QC303_241009		**09-Oct-2024**	**17-Oct-2024**	07-Apr-2025	✓	**17-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW204_241009,	0207_MW205_241009,	**09-Oct-2024**	**18-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW221_241009,	0207_MW229_241009,							
0207_MW230_241009,	0207_QC102_241009,							
0207_QC103_241009								
HDPE (no PTFE) (EP231X)								
0207_MW172_241010,	0207_MW173_241010,	**10-Oct-2024**	**16-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW193_241010,	0207_MW198_241010							
HDPE (no PTFE) (EP231X)								
0207_QC104_241010,	0207_QC304_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**17-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW207_241010,	0207_MW233_241010,	**10-Oct-2024**	**18-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW235_241010,	0207_MW236_241010,							
0207_MW241_241010,	0207_MW249_241010,							
0207_MW252_241010,	0207_MW299_241010,							
0207_MW300_241010,	0207_MW562_241010,							
0207_MW563_241010								

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)								
0207_QC302_241008,	0207_QC502_241008 - Trip Blank	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**17-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW245_241008		**08-Oct-2024**	**18-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW167_241009,	0207_MW174_241009,	**09-Oct-2024**	**16-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW178_241009,	0207_MW179_241009,							
0207_MW189_241009,	0207_MW201_241009,							
0207_MW202_241009,	0207_MW203_241009							
HDPE (no PTFE) (EP231X)								
0207_QC303_241009		**09-Oct-2024**	**17-Oct-2024**	07-Apr-2025	✓	**17-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW204_241009,	0207_MW205_241009,	**09-Oct-2024**	**18-Oct-2024**	07-Apr-2025	✓	**18-Oct-2024**	07-Apr-2025	✓
0207_MW221_241009,	0207_MW229_241009,							
0207_MW230_241009,	0207_QC102_241009,							
0207_QC103_241009								
HDPE (no PTFE) (EP231X)								
0207_MW172_241010,	0207_MW173_241010,	**10-Oct-2024**	**16-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW193_241010,	0207_MW198_241010							
HDPE (no PTFE) (EP231X)								
0207_QC104_241010,	0207_QC304_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**17-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW207_241010,	0207_MW233_241010,	**10-Oct-2024**	**18-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
0207_MW235_241010,	0207_MW236_241010,							
0207_MW241_241010,	0207_MW249_241010,							
0207_MW252_241010,	0207_MW299_241010,							
0207_MW300_241010,	0207_MW562_241010,							
0207_MW563_241010								

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	57	**7.02**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	57	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	57	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	57	**3.51**	**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.

QUALITY CONTROL REPORT

Work Order	: **EB2432583**	Page	: 1 of 12
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 24-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
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]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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: **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: 6119474)									
EB2432583-020	0207_MW229_241009	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.88)*	µg/L	11.3	10.6	6.6	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.88)*	µg/L	49.5	48.3	2.3	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.88)*	µg/L	1.07	1.15	7.1	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.88)*	µg/L	<0.89	<0.88	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.88)*	µg/L	<0.89	<0.88	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
EB2432583-035	0207_MW563_241010	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.27	0.25	7.9	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.04)*	µg/L	0.05	0.07	19.5	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.04)*	µg/L	0.13	0.36	92.2	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.04)*	µg/L	0.08	0.35	121	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.04)*	µg/L	<0.04	<0.04	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6119481)									
EB2435082-007	Anonymous	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	0.03	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
EB2435082-008	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	0.04	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6119481) - continued									
EB2435082-008	Anonymous	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: 6119474)									
EB2432583-020	0207_MW229_241009	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.88)*	µg/L	<0.89	<0.88	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.88)*	µg/L	<0.89	<0.88	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.88)*	µg/L	2.77	2.57	7.6	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.88)*	µg/L	<0.89	<0.88	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.22)*	µg/L	<0.22	<0.22	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.22)*	µg/L	<0.22	<0.22	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (4.4)*	µg/L	<4.5	<4.4	0.0	No Limit
EB2432583-035	0207_MW563_241010	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.03	0.05	42.4	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.10	0.18	54.9	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.19	0.18	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.05	82.2	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: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119481)									
EB2435082-007	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

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: 6119481) - continued									
EB2435082-007	Anonymous	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: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	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
EB2435082-008	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	0.03	0.03	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	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: 6119474)									
EB2432583-020	0207_MW229_241009	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.22)*	µg/L	<0.22	<0.22	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.22)*	µg/L	<0.22	<0.22	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.22)*	µg/L	<0.22	<0.22	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.22)*	µg/L	<0.22	<0.22	0.0	No Limit
EB2432583-035	0207_MW563_241010	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

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: 6119474) - continued									
EB2432583-035	0207_MW563_241010	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119481)									
EB2435082-007	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
EB2435082-008	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119474)									
EB2432583-020	0207_MW229_241009	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05 (0.09)*	µg/L	<0.09	<0.09	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: 6119474) - continued									
EB2432583-020	0207_MW229_241009	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
EB2432583-035	0207_MW563_241010	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119481)									
EB2435082-007	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
EB2435082-008	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

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: 6119462)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	81.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	88.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	82.8	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	86.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	83.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119474)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	91.7	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	107	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	97.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	104	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	110	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	131	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119481)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	83.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	88.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	73.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	75.2	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	74.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	71.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119462)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	80.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	87.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	84.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	80.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	86.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	83.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	87.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	93.8	72.0	134

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: 6119462) - continued								
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	98.0	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	87.8	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	98.8	46.1	144
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119474)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	79.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.0	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	88.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	85.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	94.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	97.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	99.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	109	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	108	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	103	46.1	144
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119481)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	77.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	80.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	82.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	83.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	80.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	85.8	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	87.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	83.2	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	86.9	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	# 0.08	0.25 µg/L	86.4	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119462)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	82.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	93.3	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	81.8	60.5	138

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: 6119462) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	86.3	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.9	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	92.2	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	82.8	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119474)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	110	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	90.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	90.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	102	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119481)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	87.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	# 55.2	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	# 51.4	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	75.8	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	71.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	112	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119462)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	77.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	86.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	76.6	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119474)								

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: 6119474) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	103	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	113	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	121	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119481)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	78.3	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 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	0.24 µg/L	74.4	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	69.5	64.2	133

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: 6119474)							
EB2432583-030	0207_MW249_241010	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	# Not Determined	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	# Not Determined	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	105	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	86.9	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	99.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6119481)							
EB2435082-011	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	95.8	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	90.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	70.8	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	81.1	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	91.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	72.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119474)							
EB2432583-030	0207_MW249_241010	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	117	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	118	72.0	129

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119474) - continued							
EB2432583-030	0207_MW249_241010	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	116	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	76.1	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	93.6	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	96.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	87.2	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	96.8	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	106	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	94.6	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119481)							
EB2435082-011	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	73.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	77.6	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	87.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	85.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	76.6	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	93.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	93.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	92.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	83.3	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	102	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	79.9	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	79.1	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119474)							
EB2432583-030	0207_MW249_241010	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	89.0	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	89.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	83.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	89.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	93.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	89.2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	81.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119481)							
EB2435082-011	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	95.4	59.0	135

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: 6119481) - continued							
EB2435082-011	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	85.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	76.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	78.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	78.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	111	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119474)							
EB2432583-030	0207_MW249_241010	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.6	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	116	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	81.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	71.4	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119481)							
EB2435082-011	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	94.9	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	97.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	74.9	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	72.0	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432583**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 22-Oct-2024	Scheduled Reporting Date	: **22-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	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 be advised that sample ALS ID #41 was received with label as "0207_QC304_241010", which differ from ID on the Chain of Custody. ALS has labelled the sample as per the containers received as sampling date is the 10/10/24. If you wish to change this, please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- **Please be advised that samples ALS ID #7 "0207_MW187_2410"(denoted SNR on the scanned COC), ALS ID #18 0207_MW222_2410", #19 "0207_MW223_2410", #22 "0207_MW232_2410", #27 "0207_MW242_2410"and #28 "0207_MW243_2410" were not received at the laboratory.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples "QC202", "QC203" and "QC204" has been forwarded to Eurofins, as requested.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432583-042 : [08-Oct-2024] : 0207_QC502_241008 - Trip Blank

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 (31 analytes)
EB2432583-001	09-Oct-2024 00:00	0207_MW167_241009	✓
EB2432583-002	10-Oct-2024 00:00	0207_MW172_241010	✓
EB2432583-003	10-Oct-2024 00:00	0207_MW173_241010	✓
EB2432583-004	09-Oct-2024 00:00	0207_MW174_241009	✓
EB2432583-005	09-Oct-2024 00:00	0207_MW178_241009	✓
EB2432583-006	09-Oct-2024 00:00	0207_MW179_241009	✓
EB2432583-008	09-Oct-2024 00:00	0207_MW189_241009	✓
EB2432583-009	10-Oct-2024 00:00	0207_MW193_241010	✓
EB2432583-010	10-Oct-2024 00:00	0207_MW198_241010	✓
EB2432583-011	09-Oct-2024 00:00	0207_MW201_241009	✓
EB2432583-012	09-Oct-2024 00:00	0207_MW202_241009	✓
EB2432583-013	09-Oct-2024 00:00	0207_MW203_241009	✓
EB2432583-014	09-Oct-2024 00:00	0207_MW204_241009	✓
EB2432583-015	09-Oct-2024 00:00	0207_MW205_241009	✓
EB2432583-016	10-Oct-2024 00:00	0207_MW207_241010	✓
EB2432583-017	09-Oct-2024 00:00	0207_MW221_241009	✓
EB2432583-020	09-Oct-2024 00:00	0207_MW229_241009	✓
EB2432583-021	09-Oct-2024 00:00	0207_MW230_241009	✓
EB2432583-023	10-Oct-2024 00:00	0207_MW233_241010	✓
EB2432583-024	10-Oct-2024 00:00	0207_MW235_241010	✓
EB2432583-025	10-Oct-2024 00:00	0207_MW236_241010	✓
EB2432583-026	10-Oct-2024 00:00	0207_MW241_241010	✓
EB2432583-029	08-Oct-2024 00:00	0207_MW245_241008	✓
EB2432583-030	10-Oct-2024 00:00	0207_MW249_241010	✓
EB2432583-031	10-Oct-2024 00:00	0207_MW252_241010	✓
EB2432583-032	10-Oct-2024 00:00	0207_MW299_241010	✓
EB2432583-033	10-Oct-2024 00:00	0207_MW300_241010	✓
EB2432583-034	10-Oct-2024 00:00	0207_MW562_241010	✓
EB2432583-035	10-Oct-2024 00:00	0207_MW563_241010	✓
EB2432583-036	09-Oct-2024 00:00	0207_QC102_241009	✓
EB2432583-037	09-Oct-2024 00:00	0207_QC103_241009	✓
EB2432583-038	10-Oct-2024 00:00	0207_QC104_241010	✓
EB2432583-039	08-Oct-2024 00:00	0207_QC302_241008	✓

			WATER - EP231X PFAS - Full Suite (31 analytes)
EB2432583-040	09-Oct-2024 00:00	0207_QC303_241009	✓
EB2432583-041	10-Oct-2024 00:00	0207_QC304_241010	✓
EB2432583-042	08-Oct-2024 00:00	0207_QC502_241008 T...	✓

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

[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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- Electronic SRN for ESdat (ESRN_ESDAT) Email

[redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 5

CoC #: (if applicable)

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank)	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
*INVOICE TO: (client default if nil)			
*EMAIL REPORTS TO: (default to PM if blank)	[redacted]		

SAMPLER: [redacted]

SAMPLER MOBILE:

PURCHASE ORDER NO.:

SITE: Swartz Barracks

☑ CC Invoice to PM

BIOSECURITY

Country of Origin: (if not Australia)

*** STORAGE REQUIREMENTS** (Please check box →)

☑ Standard Storage

☐ Extended Storage

Standard Storage time from receipt of samples: Waters - 3 weeks, Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** (Please check box →) (Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)

☐ 3 day (+15%)

☐ 2 day (+30%)

☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Environmental Division Brisbane
Work Order Reference
EB2432583

Telephone : +61-7-3552-8881

Comments: EB2432583 batch 1 35 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)	Lab QC (additional bottles req.) Dup	Lab QC MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432583-1	0207_MW167_2410 09		9/10/24	2	W				X							☐	☐	
EB2432583-2	0207_MW172_2410 10		10/10/24	2	W				X							☐	☐	
EB2432583-3	0207_MW173_2410 10		10/10/24	2	W				X							☐	☐	
EB2432583-4	0207_MW174_2410 09		9/10/24	2	W				X							☐	☐	
EB2432583-5	0207_MW178_2410 09		9/10/24	2	W				X							☐	☐	
EB2432583-6	0207_MW179_2410 09		9/10/24	2	W				X							☐	☐	
EB2432583-7	SNR 0207_MW187_2410 09		9/10/24	2	W				X							☐	☐	
EB2432583-8	0207_MW189_2410 09		9/10/24	2	W				X							☐	☐	
EB2432583-9	0207_MW193_2410 10		10/10/24	2	W				X							☐	☐	
EB2432583-10	0207_MW198_2410 10		10/10/24	4	W				X							☐	☐	Strong hydrocarbon odour
																☑	☐	

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None

Sample Temp at °C °C °C

Security Seal Intact (circle) Yes / No / NA(None)

Carrier Details ☐ Courier/Post ☐ Client

Con Note #

Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other

Count # # #

Relinquished by:	[redacted]	Date/Time:	9/10/24	Received by: [redacted]	Date/Time: 11/10/24 Signature 1447
Relinquished by:		Date/Time:		Received by:	Signature Date/Time:

IFM(204/17)

Form Page 1 of 1

Mandatory Fields

CHAIN OF CUSTODY

Page 2 of 5

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
SAMPLER:	[redacted]		
SAMPLER MOBILE:	[redacted]		
PURCHASE ORDER NO.:			
SITE:	Swartz Barracks		

*INVOICE TO: *(client default if nil)* — ☑ CC Invoice to PM

*EMAIL REPORTS TO: *(default to PM if blank)* [redacted]

BIOSECURITY

Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS** *Please check box →*

- ☑ Standard Storage
- ☐ Extended Storage

Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** *Please check box →* *(Not all tests can be expedited, contact Client Services for more information)*

- ☑ 5+ days
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

WO Sticker to go here. *(ALS use only)*

Comments: EB2432583 batch 1 35 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432583-11	0207_MW201_2410 09		9/10/24	2	W				X									☐	☐	
EB2432583-12	0207_MW202_2410 09		9/10/24	2	W				X									☐	☐	
EB2432583-13	0207_MW203_2410 09		9/10/24	2	W				X									☐	☐	
EB2432583-14	0207_MW204_2410 09		9/10/24	2	W				X									☐	☐	
EB2432583-15	0207_MW205_2410 09		9/10/24	2	W				X									☐	☐	
EB2432583-16	0207_MW207_2410 10		10/10/24	2	W				X									☐	☐	
EB2432583-17	0207_MW221_2410 09		9/10/24	2	W				X									☐	☐	
EB2432583-18	~~0207_MW222_2410~~																	☐	☐	Not Sampled
EB2432583-19	~~0207_MW223_2410~~																	☐	☐	Not Sampled
EB2432583-20	0207_MW229_2410 09		9/10/24	4	W				X									☐	☑	

Receipt Detail (Lab Use ONLY) — Chilling Method: Ice: Frozen / Melted; Ice Bricks: Frozen / Thawed; None — Sample Temp at Receipt: °C °C °C — Security Seal Intact *(circle)*: Yes / No / NA(None) — Carrier Details: ☐ Courier /Post ☐ Client — Con Note #: — Packaging: *(Circle)* Hard Esky Foam Esky Box/Bag/Other — Count # # #

Relinquished by:	[redacted]	Date/Time:	11/10/24	Received by:	Signature: Date/Time:
Relinquished by:	Signature:	Date/Time:		Received by:	Signature: Date/Time:

CHAIN OF CUSTODY

Mandatory Fields

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank)	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
*INVOICE TO: (client default if nil)			
*EMAIL REPORTS TO: (default to PM if blank)	[redacted]		

SAMPLER:	[redacted]
SAMPLER MOBILE:	[redacted]
PURCHASE ORDER NO.:	
SITE:	Swartz Barracks

☐ CC Invoice to PM

CoC #: (if applicable)

BIOSECURITY

Country of Origin: (if not Australia)

*** STORAGE REQUIREMENTS**
Please check box. →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box →
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

WO Sticker to go here.
(ALS use only)

Comments: EB2432583 batch 1 35 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432583-21	0207_MW230_2410 09		9/10/24	2	W				X									☐	☐	
EB2432583-22	~~0207_MW232_2410 09~~		~~10/10/24~~															☐	☐	Not sampled
EB2432583-23	0207_MW233_2410 10		10/10/24	2	W				X									☐	☐	
EB2432583-24	0207_MW235_2410 10		10/10/24	2	W				X									☐	☐	
EB2432583-25	0207_MW236_2410 10		10/10/24	2	W				X									☐	☐	
EB2432583-26	0207_MW241_2410 10		10/10/24	2	W				X									☐	☐	
EB2432583-27	~~0207_MW242_2410~~																	☐	☐	Not sampled
EB2432583-28	~~0207_MW243_2410~~																	☐	☐	Not sampled
EB2432583-29	0207_MW245_2410 08		8/10/24	2	W				X									☐	☐	
EB2432583-30	0207_MW249_2410 10		10/10/24	4	W				X									☐	☑	

Receipt Detail (Lab Use ONLY)
Chilling Method: Ice: Frozen / Melted; Ice Bricks: Frozen / Thawed; None
Sample Temp at Receipt: °C °C °C
Security Seal Intact (circle): Yes / No / NA(None)
Carrier Details Con Note #: ☐ Courier /Post ☐ Client
Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other
Count # # #

Relinquished by:	[redacted]	Date/Time:	11/10/24
Received by:		Signature	
Relinquished by:		Signature:	Date/Time:
Received by:		Signature	Date/Time:

Mandatory Fields

CHAIN OF CUSTODY

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]	SAMPLER MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4	PURCHASE ORDER NO.:	
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC			SITE:	Swartz Barracks

*INVOICE TO: *(client default if nil)* — ☑ CC Invoice to PM

*EMAIL REPORTS TO: *(default to PM if blank)* [redacted]

BIOSECURITY

Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS**
Please check box →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box →
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days / 3 day
☐ 2 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

WO Sticker to go here.
(ALS use only)

Comments: EB2432583 batch 1 35 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
E82432583-31	0207_MW252_241010		10/10/24	2	W				X									☐	☐	
E82432583-32	0207_MW299_241010		10/10/24	2	W				X									☐	☐	
E82432583-33	0207_MW300_241010		10/10/24	2	W				X									☐	☐	
E82432583-34	0207_MW562_241010		10/10/24	2	W				X									☐	☐	
E82432583-35	0207_MW563_241010		10/10/24	4	W				X									☑	☐	
36	0207_QC102_241009		9/10/24	2	W				X									☐	☐	
—	0207_QC202_241009		9/10/24	2	W				X									☐	☐	Send to Eurofins
37	0207_QC103_241009		9/10/24	2	W				X									☐	☐	
—	0207_QC203_241009		9/10/24	2	W				X									☐	☐	Send to Eurofins
38	0207_QC104_241010		10/10/24	2	W				X									☐	☐	

Receipt Detail (Lab Use ONLY)
Chilling Method: Ice: Frozen / Melted — Ice Bricks: Frozen / Thawed — None
Sample Temp at Receipt: °C °C °C
Security Seal Intact *(circle)*: Yes / No / NA(None)
Carrier Details / Con Note #:
☐ Courier /Post ☐ Client
Packaging: *(Circle)* Hard Esky Foam Esky Box/Bag/Other
Count # # #

Relinquished by:	[redacted]	Date/Time:	11/10/24
Relinquished by:	Signature:	Date/Time:	
Received by:	Signature	Date/Time:	
Received by:	Signature	Date/Time:	

Mandatory Fields

CHAIN OF CUSTODY

CoC #: (if applicable)

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank)	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
SAMPLER:	[redacted]		
SAMPLER MOBILE:	[redacted]		
PURCHASE ORDER NO.:			
SITE:	Swartz Barracks		

*INVOICE TO: (client default if nil)

☑ CC Invoice to PM

*EMAIL REPORTS TO: (default to PM if blank) [redacted]

BIOSECURITY

Country of Origin: (if not Australia)

*** STORAGE REQUIREMENTS**
Please check box →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard
☐ Extended
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box →
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

WO Sticker to go here.
(ALS use only)

Comments: EB2432583 batch 1 35 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolic (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
–	0207-QC204-241010		10/10/24	2	W				X									☐	☐	Send to Eurofins.
39	0207-QC302-241008		8/10/24	2	W				X									☐	☐	
40	0207-QC303-241009		9/10/24	2	W				X									☐	☐	
41	0207-QC304-241009		10/10/24	2	W				X									☐	☐	
42	0207-QC502-241008		8/10/24	2	W				X									☐	☐	Trip Blank
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY)
Chilling Method: Ice: Frozen / Melted; Ice Bricks: Frozen / Thawed; None
Sample Temp at Receipt: °C °C °C
Security Seal Intact (circle): Yes / No / NA(None)
Carrier Details: ☐ Courier /Post ☐ Client
Con Note #
Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other
Count # # #

Relinquished by:	[redacted]	Date/Time:	11/10/24	Received by:	Signature / Date/Time:
Relinquished by:	re:	Date/Time:		Received by:	Signature / Date/Time:

GHD Pty Ltd QLD
145 Ann Street
Brisbane
QLD 4000

NATA Accredited
Accreditation Number 1261
Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1148776-W**
Project name SWARTZ BARRACKS
Project ID 12638013 SWARTZ BARRACKS LC
Received Date Oct 15, 2024

Client Sample ID			**0207_QC202_241009**	**0207_QC204_241010**	**0207_QC203_241009**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**B24-Oc0032847**	**B24-Oc0032848**	**B24-Oc0032850**
Date Sampled			**Oct 09, 2024**	**Oct 10, 2024**	**Oct 09, 2024**
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	21	0.48	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	41	1.5	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	170	2.0	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]16	[N09]0.68	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]46	[N09]0.56	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	[N09]0.26	[N09]0.11	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	0.02	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	67	59	57
13C5-PFPeA (surr.)	1	%	78	[J+]150	92
13C5-PFHxA (surr.)	1	%	72	140	77
13C4-PFHpA (surr.)	1	%	88	[J+]152	93
13C8-PFOA (surr.)	1	%	70	57	81
13C5-PFNA (surr.)	1	%	97	73	81
13C6-PFDA (surr.)	1	%	56	60	76
13C2-PFUnDA (surr.)	1	%	151	101	90
13C2-PFDoDA (surr.)	1	%	113	85	71
13C2-PFTeDA (surr.)	1	%	142	86	57
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	182	73	74
D3-N-MeFOSA (surr.)	1	%	73	67	52

Client Sample ID			0207_QC202_241009	0207_QC204_241010	0207_QC203_241009
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B24-Oc0032847	B24-Oc0032848	B24-Oc0032850
Date Sampled			Oct 09, 2024	Oct 10, 2024	Oct 09, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
D5-N-EtFOSA (surr.)	1	%	96	79	59
D7-N-MeFOSE (surr.)	1	%	128	59	51
D9-N-EtFOSE (surr.)	1	%	130	71	59
D5-N-EtFOSAA (surr.)	1	%	89	73	64
D3-N-MeFOSAA (surr.)	1	%	72	63	55
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	110	0.40	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	[G01]< 0.1	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	58	0.17	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]110	[N09]0.40	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]790	[N09]3.2	[N09]0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]53	[N09]0.14	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]300	[N09]2.7	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	[G01]< 0.1	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	82	60	70
18O2-PFHxS (surr.)	1	%	95	118	59
13C8-PFOS (surr.)	1	%	91	117	68
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	0.02	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	0.59	0.65	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	0.02	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	48	63	53
13C2-6:2 FTSA (surr.)	1	%	53	65	63
13C2-8:2 FTSA (surr.)	1	%	22	43	56
13C2-10:2 FTSA (surr.)	1	%	54	55	57
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	1090	5.9	0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	346	3.26	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	1136	6.46	0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	1494.59	12.19	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	1715.87	13.03	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: GHD Pty Ltd QLD
Address: 145 Ann Street
Brisbane
QLD 4000

Project Name: SWARTZ BARRACKS
Project ID: 12638013 SWARTZ BARRACKS LC

Order No.:
Report #: 1148776
Phone: 07 3316 3000
Fax: 07 3316 3333

Received: Oct 15, 2024 8:29 AM
Due: Oct 22, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0207_QC202_241009	Oct 09, 2024		Water	B24-Oc0032847	X
2	0207_QC204_241010	Oct 10, 2024		Water	B24-Oc0032848	X
3	0207_QC203_241009	Oct 09, 2024		Water	B24-Oc0032850	X
Test Counts						3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	100			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	111			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	88			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	94			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	91			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	124			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	104			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	90			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	94			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	111			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	86			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	101			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	121			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	111			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	115			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	97			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	84			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	99			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	142			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	102			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B24-Oc0032848	CP	%	121			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0032848	CP	%	800			50-150	Fail	J01
Perfluorohexanoic acid (PFHxA)	B24-Oc0032848	CP	%	4.0			50-150	Fail	J01
Perfluoroheptanoic acid (PFHpA)	B24-Oc0032848	CP	%	132			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0032848	CP	%	149			50-150	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0032848	CP	%	102			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0032848	CP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0032848	CP	%	104			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0032848	CP	%	120			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0032848	CP	%	117			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0032848	CP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B24-Oc0032848	CP	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0032848	CP	%	111			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0032848	CP	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0032848	CP	%	125			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0032848	CP	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0032848	CP	%	106			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0032848	CP	%	105			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0032848	CP	%	134			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0032848	CP	%	119			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0032848	CP	%	129			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0032848	CP	%	124			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0032848	CP	%	1200			50-150	Fail	J01
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0032848	CP	%	225			50-150	Fail	J01
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0032848	CP	%	115			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0032848	CP	%	72			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0032848	CP	%	125			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0032848	CP	%	471			50-150	Fail	J01
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0032848	CP	%	128			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0032848	CP	%	99			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0032879	NCP	ug/L	0.04	0.04	3.0	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0032879	NCP	ug/L	0.20	0.16	23	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0032879	NCP	ug/L	0.03	0.02	23	30%	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0032879	NCP	ug/L	0.04	0.04	20	30%	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0032879	NCP	ug/L	0.11	0.08	27	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0032879	NCP	ug/L	0.04	0.03	10	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0032879	NCP	ug/L	0.11	0.09	21	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0032879	NCP	ug/L	0.78	0.60	26	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0032879	NCP	ug/L	0.06	0.05	24	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0032879	NCP	ug/L	0.44	0.37	16	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0032879	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0032879	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
J+	If the percent recoveries were greater than the upper control limit, qualify detects for the analyte in associated samples as estimated with a positive bias J+.
J01	Failures of the Matrix Spike (MS) due to the presence of analytes(s) in parent sample at > 3X the spike concentration.
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted]

Analytical Services Manager

Senior Analyst-PFAS

Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: GHD Pty Ltd QLD
Contact name: [redacted]
Project name: SWARTZ BARRACKS
Project ID: 12638013 SWARTZ BARRACKS LC
Turnaround time: 5 Day
Date/Time received Oct 15, 2024 8:29 AM
Eurofins reference 1148776

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 8.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted]

Results will be delivered electronically via email to [redacted].

Note: A copy of these results will also be delivered to the general GHD Pty Ltd QLD email address.

CHAIN OF CUSTODY

Page 4 of 5

CoC #: (if applicable)

Mandatory Fields

CLIENT CODE: GHDSER

*CLIENT: GHD PTY LTD

OFFICE: (Invoiced Office)

PROJECT NO./PROJECT: 12638013 Swartz Barracks LC

*INVOICE TO: (client default if nil)

*PROJECT MANAGER: [redacted]

*PM MOBILE:

ALS QUOTE # (Client PL if blank): EB24GHDSER0019 V4

SAMPLER: [redacted]

SAMPLER MOBILE:

PURCHASE ORDER NO.:

SITE: Swartz Barracks

*EMAIL REPORTS TO: (default to PM if blank) [redacted]

☑ CC Invoice to PM

BIOSECURITY

Country of Origin: (if not Australia)

*** STORAGE REQUIREMENTS**

Please check box →

Standard Storage time from receipt of samples:

Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**

Please check box →

(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (Standard)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432583 batch 1 35 primary water samples

14/10 2:55pm

WO Sticker to go here, (ALS use only)

Chilled

Temp: 8.9

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)		Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432583-31	0207_MW252_241010		10/10/24	2	W				X								☐	☐	
EB2432583-32	0207_MW299_241010		10/10/24	2	W				X								☐	☐	
EB2432583-33	0207_MW300_241010		10/10/24	2	W				X								☐	☐	
EB2432583-34	0207_MW562_241010		10/10/24	2	W				X								☐	☐	1148776
EB2432583-35	0207_MW563_241010		10/10/24	4	W				X								☐	☐	
36	0207_QC102_241009		9/10/24	2	W				X								☑	☐	
—	0207_QC202_241009		9/10/24	2	W				X								☐	☐	
37	0207_QC103_241009		9/10/24	2	W				X								☐	☐	Send to Eurofins
—	0207_QC203_241009		9/10/24	2	W				X								☐	☐	
38	0207_QC104_241010		10/10/24	2	W				X								☐	☐	Send to Eurofins

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: / Ice Bricks: Frozen / Melted / Frozen / Thawed / None

Sample Temp at Receipt: °C °C °C

Security Seal Intact (circle): Yes / No / NA(None)

Carrier Details / Con Note #: ☐ Courier /Post ☐ Client

Packaging: (Circle) Hard Esky / Foam Esky / Box/Bag/Other

Count # # #

Relinquished by: [redacted] Signature: [redacted] Date/Time: 14/10/24

Relinquished by: Signature: Date/Time:

Received by: Signature: Date/Time:

Received by: Signature: Date/Time:

CHAIN OF CUSTODY

Page 5 of 5

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	SAMPLER:
*CLIENT:	GHD PTY LTD	*PM MOBILE:	SAMPLER MOBILE:
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)* EB24GHDSER0019 V4	PURCHASE ORDER NO.:
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		SITE: Swartz Barracks
*INVOICE TO: *(client default if nil)*			☑ CC Invoice to PM
*EMAIL REPORTS TO: *(default to PM if blank)*			

*** STORAGE REQUIREMENTS** *Please check box →*

- ☑ Standard Store
- ☐ Extended Store

Standard Storage time from receipt of samples: Waters - 3 weeks, Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** *Please check box →* *(Not all tests can be expedited, contact Client Services for more information)*

- ☑ 5+ days
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

Comments: EB2432583 batch 1 35 primary water samples

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

BIOSECURITY

Country of Origin: *(if not Australia)*

WO Sticker to go here. *(ALS use only)*

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D) Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)	Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
–	0207-QC204-241010		10/10/24	2	W				X							☐	☐	Send to Eurofins.
39	0207-QC302-241008		8/10/24	2	W				X							☐	☐	
40	0207-QC303-241009		9/10/24	2	W				X							☐	☐	
41	0207-QC304-241009		10/10/24	2	W				X							☐	☐	
42	0207-QC502-241008		8/10/24	2	W				X							☐	☐	Trip Blank
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: / Ice Bricks: — Frozen / Melted — Frozen / Thawed — None

Sample Temp at Receipt: °C °C °C

Security Seal Intact *(circle)*: Yes / No / NA(None)

Carrier Details: ☐ Courier /Post ☐ Client

Con Note #

Packaging: *(Circle)* Hard Esky / Foam Esky / Box/Bag/Other

Count # # #

Relinquished by:	Signature:	Date/Time: 11/10/24	Received by: / Signature: / Date/Time:
Relinquished by:	Signature:	Date/Time:	Received by: / Signature: / Date/Time:

Outlook

RE: Eurofins Sample Receipt Advice - Report 1148776 : Site SWARTZ BARRACKS (12638013 SWARTZ BARRACKS LC)

From [redacted]
Date Tue 15/10/24 8:29 AM
To #AU03_EnviroSampleBris <EnviroSampleBris@eurofins.com>
Cc [redacted]

> **Unverified Sender:** The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi there,

Please analyse all samples for PFAS standard suite. This will apply to:

- 1148776
- 1148776
- 1148785

[redacted]

GHD
Proudly employee-owned | ghd.com
230 Harbour Drive, Coffs Harbour, NSW, 2450, Australia
[redacted]

The Power of Commitment

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From: envirosamplebris@eurofins.com <envirosamplebris@eurofins.com>
Sent: Monday, 14 October 2024 6:00 PM
To: [redacted]
Cc: [redacted]
Subject: Eurofins Sample Receipt Advice - Report 1148776 : Site SWARTZ BARRACKS (12638013 SWARTZ BARRACKS LC)

Dear [redacted]
Please advise testing for all the samples. They have been put on hold.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

CERTIFICATE OF ANALYSIS

Work Order	: EB2432603	Page	: 1 of 11
Client	: GHD PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 24-Oct-2024 16:56
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 20		
No. of samples analysed	: 19		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: High LCS recovery has been deemed acceptable as all associated analyte results are less than LOR.
- EP231X PFAS: The LOR for particular analytes has been raised in sample '0207_MW568_241008' (EB2432603-002) due to matrix interference.
- EP231X PFAS: Particular samples required dilutions prior to extraction due to matrix interference. LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standarc recovery less than 50% and greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: Particular samples required dilutions prior to analysis due to the suppression of particular internal standards. 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 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	0207_MW568_241008	0207_MW569_241010	0207_MW570_S_241010	0207_MW570_D_241010	0207_MW571_S_241010
				Sampling date / time	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432603-002	EB2432603-003	EB2432603-004	EB2432603-005	EB2432603-006
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.03	**0.46**	**0.06**	**0.05**	**0.38**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.17**	**0.07**	**0.04**	**0.38**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.03	**0.36**	**0.45**	**0.40**	**2.49**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.04	**0.02**	<0.04	**0.20**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.02	**0.08**	**0.25**	**0.29**	**2.78**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.2	<0.2	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.04	**0.15**	<0.04	<0.04	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.14**	**0.63**	**0.06**	**0.09**	**0.55**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.04	**0.10**	<0.04	<0.04	**0.08**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.04	**0.16**	<0.04	<0.04	**0.14**
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	0207_MW568_241008	0207_MW569_241010	0207_MW570_S_241010	0207_MW570_D_241010	0207_MW571_S_241010
				Sampling date / time	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432603-002	EB2432603-003	EB2432603-004	EB2432603-005	EB2432603-006
					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		**0.46**	<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		**0.60**	**2.11**	**0.91**	**0.87**	**7.08**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.44**	**0.70**	**0.69**	**5.27**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.60**	**1.94**	**0.82**	**0.83**	**6.50**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**87.6**	**87.4**	**82.1**	**72.0**	**91.2**
13C8-PFOA	----	0.02	%		**92.4**	**94.8**	**90.9**	**79.7**	**92.4**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW571_D_241010	0207_MW572_S_241010	0207_MW572_D_241010	0207_MW573_D_241010	0207_MW573_S_241010
				Sampling date / time	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
					EB2432603-007	EB2432603-008	EB2432603-009	EB2432603-010	EB2432603-011
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		0.20	0.78	0.74	0.71	0.80
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		0.17	0.65	0.74	0.62	0.82
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		1.05	3.30	2.92	3.14	3.53
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		0.07	0.15	0.23	0.17	0.24
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		1.23	2.46	2.65	2.60	2.83
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	0.2	0.4	<0.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		0.09	0.31	0.28	0.29	0.32
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		0.30	1.28	1.14	1.18	1.21
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		0.06	0.21	0.19	0.21	0.22
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		0.10	0.28	0.27	0.28	0.27
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.04
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	0207_MW571_D_241010	0207_MW572_S_241010	0207_MW572_D_241010	0207_MW573_D_241010	0207_MW573_S_241010
				Sampling date / time	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432603-007	EB2432603-008	EB2432603-009	EB2432603-010	EB2432603-011
					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	<0.05	0.08	0.06
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
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		3.27	9.62	9.36	9.68	10.3
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		2.28	5.76	5.57	5.74	6.36
Sum of PFAS (WA DER List)	---	0.01	µg/L		3.03	8.82	8.39	8.89	9.24
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		86.0	77.9	86.3	90.9	88.0
13C8-PFOA	---	0.02	%		88.7	91.4	91.6	92.2	90.9

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW574_S_241008	0207_MW574_D_241008	0207_MW575_241010	0207_MW576_241010	0207_MW577_241010
				Sampling date / time	08-Oct-2024 00:00	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432603-012	EB2432603-013	EB2432603-014	EB2432603-015	EB2432603-016
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.10**	**0.09**	**0.47**	<0.04	<0.04
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.08**	**0.08**	**0.42**	<0.04	<0.04
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.41**	**0.43**	**2.56**	**0.17**	<0.04
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.04	<0.02	**0.18**	<0.04	<0.04
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.18**	**0.16**	**2.22**	**0.23**	<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	<0.2	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.04**	<0.04	**0.17**	<0.02	<0.04
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.14**	**0.09**	**0.66**	**0.04**	<0.04
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.04	**0.11**	<0.02	<0.04
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	<0.04	**0.16**	**0.01**	<0.04
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW574_S_241008	0207_MW574_D_241008	0207_MW575_241010	0207_MW576_241010	0207_MW577_241010
				Sampling date / time	08-Oct-2024 00:00	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432603-012	EB2432603-013	EB2432603-014	EB2432603-015	EB2432603-016
					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	<0.05	<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		**0.97**	**0.85**	**6.95**	**0.45**	<0.04
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.59**	**0.59**	**4.78**	**0.40**	<0.04
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.89**	**0.77**	**6.35**	**0.45**	<0.04
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**79.5**	**85.1**	**107**	**107**
13C8-PFOA	----	0.02	%		**94.8**	**92.6**	**89.8**	**89.5**	**91.6**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW578_241008	0207_QC105_241010	0207_QC106_241010	0207_QC503_241011 Trip Blank	----
				Sampling date / time	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	11-Oct-2024 00:00	----
					EB2432603-017	EB2432603-018	EB2432603-019	EB2432603-020	----
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.05**	**0.46**	**0.07**	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	**0.48**	**0.08**	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.20**	**2.72**	**0.43**	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.04	**0.18**	<0.04	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.24**	**2.25**	**0.35**	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.2	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.17**	**0.03**	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.05**	**0.65**	**0.10**	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.11**	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	**0.16**	**0.03**	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW578_241008	0207_QC105_241010	0207_QC106_241010	0207_QC503_241011 Trip Blank	----
				Sampling date / time	08-Oct-2024 00:00	10-Oct-2024 00:00	10-Oct-2024 00:00	11-Oct-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2432603-017	EB2432603-018	EB2432603-019	EB2432603-020	--------
					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		**0.60**	**7.18**	**1.09**	<0.01	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.44**	**4.97**	**0.78**	<0.01	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.55**	**6.52**	**1.01**	<0.01	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.8**	**74.2**	**91.8**	**79.4**	----
13C8-PFOA	----	0.02	%		**93.4**	**92.9**	**88.2**	**95.0**	----

Surrogate Control Limits

Sub-Matrix: **WATER**

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432603**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 24-Oct-2024
Sampler	: [redacted]	No. of samples received	: 20
Order number	: ----	No. of samples analysed	: 19

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.**
- **Duplicate outliers exist - please see following pages for full details.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, where applicable to the methodology, 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
Duplicate (DUP) RPDs							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2432603--010	0207_MW573_D_241010	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	21.9 %	0% - 20%	**RPD exceeds LOR based limits**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2432603--010	0207_MW573_D_241010	**Perfluorohexanoic acid (PFHxA)**	307-24-4	28.6 %	0% - 20%	**RPD exceeds LOR based limits**
Laboratory Control Spike (LCS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	QC-6119490-002	----	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	184 %	53.0-142%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-6119490-002	----	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	147 %	71.0-132%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2432603--017	0207_MW578_241008	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	62.6 %	71.0-127%	**Recovery less than lower data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2432603--017	0207_MW578_241008	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	24.4 %	68.0-131%	**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	1	19	5.26	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / *Client Sample ID(s)*	***Sample Date***	*Extraction / Preparation*			*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) 0207_MW568_241008, 0207_MW574_S_241008, 0207_MW574_D_241008, 0207_MW578_241008	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW569_241010, 0207_MW570_S_241010, 0207_MW570_D_241010, 0207_MW571_S_241010, 0207_MW571_D_241010, 0207_MW572_S_241010, 0207_MW572_D_241010, 0207_MW573_D_241010, 0207_MW573_S_241010, 0207_MW575_241010, 0207_MW576_241010, 0207_MW577_241010, 0207_QC105_241010, 0207_QC106_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC503_241011 - Trip Blank	**11-Oct-2024**	**17-Oct-2024**	09-Apr-2025	✓	**18-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW568_241008, 0207_MW574_S_241008, 0207_MW574_D_241008, 0207_MW578_241008	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW569_241010, 0207_MW570_S_241010, 0207_MW570_D_241010, 0207_MW571_S_241010, 0207_MW571_D_241010, 0207_MW572_S_241010, 0207_MW572_D_241010, 0207_MW573_D_241010, 0207_MW573_S_241010, 0207_MW575_241010, 0207_MW576_241010, 0207_MW577_241010, 0207_QC105_241010, 0207_QC106_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC503_241011 - Trip Blank	**11-Oct-2024**	**17-Oct-2024**	09-Apr-2025	✓	**18-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW568_241008, 0207_MW574_S_241008, 0207_MW574_D_241008, 0207_MW578_241008	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW569_241010, 0207_MW570_S_241010, 0207_MW570_D_241010, 0207_MW571_S_241010, 0207_MW571_D_241010, 0207_MW572_S_241010, 0207_MW572_D_241010, 0207_MW573_D_241010, 0207_MW573_S_241010, 0207_MW575_241010, 0207_MW576_241010, 0207_MW577_241010, 0207_QC105_241010, 0207_QC106_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC503_241011 - Trip Blank	**11-Oct-2024**	**17-Oct-2024**	09-Apr-2025	✓	**18-Oct-2024**	09-Apr-2025	✓

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) 0207_MW568_241008, 0207_MW574_S_241008, 0207_MW574_D_241008, 0207_MW578_241008	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW569_241010, 0207_MW570_S_241010, 0207_MW570_D_241010, 0207_MW571_S_241010, 0207_MW571_D_241010, 0207_MW572_S_241010, 0207_MW572_D_241010, 0207_MW573_D_241010, 0207_MW573_S_241010, 0207_MW575_241010, 0207_MW576_241010, 0207_MW577_241010, 0207_QC105_241010, 0207_QC106_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC503_241011 - Trip Blank	**11-Oct-2024**	**17-Oct-2024**	09-Apr-2025	✓	**18-Oct-2024**	09-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW568_241008, 0207_MW574_S_241008, 0207_MW574_D_241008, 0207_MW578_241008	**08-Oct-2024**	**17-Oct-2024**	06-Apr-2025	✓	**18-Oct-2024**	06-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_MW569_241010, 0207_MW570_S_241010, 0207_MW570_D_241010, 0207_MW571_S_241010, 0207_MW571_D_241010, 0207_MW572_S_241010, 0207_MW572_D_241010, 0207_MW573_D_241010, 0207_MW573_S_241010, 0207_MW575_241010, 0207_MW576_241010, 0207_MW577_241010, 0207_QC105_241010, 0207_QC106_241010	**10-Oct-2024**	**17-Oct-2024**	08-Apr-2025	✓	**18-Oct-2024**	08-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC503_241011 - Trip Blank	**11-Oct-2024**	**17-Oct-2024**	09-Apr-2025	✓	**18-Oct-2024**	09-Apr-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432603**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	[redacted]	Telephone	[redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 24-Oct-2024
Sampler	[redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 20		
No. of samples analysed	: 19		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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: **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: 6119490)									
EB2432603-010	0207_MW573_D_241010	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.04)*	µg/L	3.14	# 2.52	21.9	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.60	2.19	16.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.04)*	µg/L	0.71	0.63	12.2	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.04)*	µg/L	0.62	0.51	19.6	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.04)*	µg/L	0.17	0.13	23.0	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: 6119490)									
EB2432603-010	0207_MW573_D_241010	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.04)*	µg/L	0.28	0.16	50.6	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.04)*	µg/L	0.29	0.21	31.5	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.04)*	µg/L	1.18	# 0.89	28.6	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.04)*	µg/L	0.21	0.13	47.7	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 (0.2)*	µg/L	0.4	0.4	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119490)									
EB2432603-010	0207_MW573_D_241010	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119490) - continued									
EB2432603-010	0207_MW573_D_241010	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119490)									
EB2432603-010	0207_MW573_D_241010	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.08	0.07	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

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: 6119490)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	102	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	102	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	106	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	127	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	118	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	# 184	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119490)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	75.7	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	97.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	108	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	111	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	# 147	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119490)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	118	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	112	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	94.3	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	106	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	102	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	93.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	101	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119490)								

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: 6119490) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	89.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	112	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	122	64.2	133

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: 6119490)							
EB2432603-017	0207_MW578_241008	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	77.6	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	# 62.6	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# 24.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	94.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	138	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119490)							
EB2432603-017	0207_MW578_241008	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	73.2	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	92.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	86.8	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	88.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	91.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.8	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	104	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	103	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	101	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	92.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	125	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119490)							
EB2432603-017	0207_MW578_241008	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	111	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	112	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	91.9	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119490) - continued							
EB2432603-017	0207_MW578_241008	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	108	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	79.0	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	99.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119490)							
EB2432603-017	0207_MW578_241008	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	92.9	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	106	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	70.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	91.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432603**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	[redacted]	E-mail	[redacted]
Telephone	: 02 6650 5666	Telephone	: +61-7-3552-8685
Facsimile	: ----	Facsimile	: +61-7-3243 7218
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 22-Oct-2024	Scheduled Reporting Date	: **22-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 20 / 20

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 be advised that an extra sample ALS ID #21 "0207_QC502_241011 - Trip Blank" was received in addition to the samples listed on the COC. This sample has been added and the requested analysis on the COC has been assigned. If you wish to change this, please contact Client Servises at ALSEnviro.Brisbane@alsglobal.com**
- **Please be advised that sample ALS ID#1 "0207_MW567_2410" was not received at the laboratory.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples " QC205", "QC206" have been forwarded to Eurofins, as requested. Please note that this will incur a freight forwarding fee.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432603-020 : [11-Oct-2024] : 0207_QC503_241011 - Trip Blank
EB2432603-021 : [11-Oct-2024] : 0207_QC502_241011 - Trip Blank

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 (31 analytes)
EB2432603-002	08-Oct-2024 00:00	0207_MW568_241008	✓
EB2432603-003	10-Oct-2024 00:00	0207_MW569_241010	✓
EB2432603-004	10-Oct-2024 00:00	0207_MW570_S_241010	✓
EB2432603-005	10-Oct-2024 00:00	0207_MW570_D_241010	✓
EB2432603-006	10-Oct-2024 00:00	0207_MW571_S_241010	✓
EB2432603-007	10-Oct-2024 00:00	0207_MW571_D_241010	✓
EB2432603-008	10-Oct-2024 00:00	0207_MW572_S_241010	✓
EB2432603-009	10-Oct-2024 00:00	0207_MW572_D_241010	✓
EB2432603-010	10-Oct-2024 00:00	0207_MW573_D_241010	✓
EB2432603-011	10-Oct-2024 00:00	0207_MW573_S_241010	✓
EB2432603-012	08-Oct-2024 00:00	0207_MW574_S_241008	✓
EB2432603-013	08-Oct-2024 00:00	0207_MW574_D_241008	✓
EB2432603-014	10-Oct-2024 00:00	0207_MW575_241010	✓
EB2432603-015	10-Oct-2024 00:00	0207_MW576_241010	✓
EB2432603-016	10-Oct-2024 00:00	0207_MW577_241010	✓
EB2432603-017	08-Oct-2024 00:00	0207_MW578_241008	✓
EB2432603-018	10-Oct-2024 00:00	0207_QC105_241010	✓
EB2432603-019	10-Oct-2024 00:00	0207_QC106_241010	✓
EB2432603-020	11-Oct-2024 00:00	0207_QC503_241011 T...	✓
EB2432603-021	11-Oct-2024 00:00	0207_QC502_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email
- Electronic SRN for ESdat (ESRN_ESDAT) — Email

[redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 3

CoC #: (if applicable)

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank)	[redacted]
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
SAMPLER:	[redacted]		
SAMPLER MOBILE:			
PURCHASE ORDER NO.:			
SITE:	Swartz Barracks		

*INVOICE TO: (client default if nil)

☑ CC Invoice to PM

*EMAIL REPORTS TO: (default to PM if blank) [redacted]

BIOSECURITY

Country of Origin: (if not Australia)

Environmental Division Brisbane

Work Order Reference

EB2432603

Telephone : +61-7-3552-8695

*** STORAGE REQUIREMENTS** Please check box →

Standard time from receipt of samples: Waters - 3 weeks, Soils - 2 months

☑ Standard Storage

☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** Please check box →

(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)

☐ 3 day (+15%)

☐ 2 day (+30%)

☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432603 Batch 2 - 17 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432603-1	~~0207_MW567_2410~~																	☐	☐	Not sampled
EB2432603-2	0207_MW568_2410 08		8/10/24	2	W				X									☐	☐	
EB2432603-3	0207_MW569_2410 09		10/10/24	2	W				X									☐	☐	
EB2432603-4	0207_MW570_S_2410 10		10/10/24	2	W				X									☐	☐	
EB2432603-5	0207_MW570_D_2410 10		10/10/24	2	W				X									☐	☐	
EB2432603-6	0207_MW571_S_2410 10		10/10/24	2	W				X									☐	☐	
EB2432603-7	0207_MW571_D_2410 10		10/10/24	2	W				X									☐	☐	
EB2432603-8	0207_MW572_S_2410 10		10/10/24	2	W				X									☐	☐	
EB2432603-9	0207_MW572_D_2410 10		10/10/24	2	W				X									☐	☐	
EB2432603-10	0207_MW573_D_2410 10		10/10/24	4	W				X									☐	☑	Incorrectly labelled. Please amend to D

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: Frozen / Melted; Ice Bricks: Frozen / Thawed; None

Sample Temp at Receipt: °C °C °C

Security Seal Intact (circle): Yes / No / NA(None)

Carrier Details: ☐ Courier/Post ☐ Client

Con Note #

Packaging: (Circle) Hard Esky, Foam Esky, Box/Bag/Other

Count # # #

Relinquished by: [redacted] Date/Time: 11/10/24

Relinquished by: Date/Time:

Received by: [redacted] Date/Time: 11/10/24 1463

Received by: Signature Date/Time:

Mandatory Fields

CHAIN OF CUSTODY

Page 2 of 3

CoC #: (if applicable)

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank)	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
*INVOICE TO: (client default if nil)			
*EMAIL REPORTS TO: (default to PM if blank)	[redacted]		

SAMPLER:	[redacted]
SAMPLER MOBILE:	[redacted]
PURCHASE ORDER NO.:	
SITE:	Swartz Barracks

☑ CC Invoice to PM

BIOSECURITY

Country of Origin: (if not Australia)

*** STORAGE REQUIREMENTS**
Please check box →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box →
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432603 Batch 2 - 17 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432603-11	0207_MW573_D_241010		10/10/24	2	W				X									☐	☐	Incorrectly labelled. Please amend to S.
EB2432603-12	0207_MW574_S_241008		8/10/24	2	W				X									☐	☐	
EB2432603-13	0207_MW574_D_241008		8/10/24	2	W				X									☐	☐	
EB2432603-14	0207_MW575_241010		8 10/10/24	2	W				X									☐	☐	
EB2432603-15	0207_MW576_241010		10/10/24	2	W				X									☐	☐	
EB2432603-16	0207_MW577_241010		10/10/24	2	W				X									☐	☐	
EB2432603-17	0207_MW578_241006		8/10/24	4	W				X									☑	☐	
18	0207_QC105_241010		10/10/24	2	W				X									☐	☐	
-	0207_QC205_241010		10/10/24	2	W				X									☐	☐	send to Eurofins
19	0207_QC106_241010		10/10/24	2	W				X									☐	☐	

Receipt Detail (Lab Use ONLY)	Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None	Sample Temp at Receipt °C °C °C	Security Seal Intact (circle) Yes / No / NA(None)	Carrier Details ☐ Courier/Post ☐ Client Con Note #	Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other Count # # #

Relinquished by: [redacted]	Signature: [redacted]	Date/Time: 11/10/24	Received by:	Signature	Date/Time:
Relinquished by:	Signature:	Date/Time:	Received by:	Signature	Date/Time:

WO Sticker to go here.
(ALS use only)

CHAIN OF CUSTODY

Mandatory Fields

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
SAMPLER:	[redacted]		
SAMPLER MOBILE:	[redacted]		
PURCHASE ORDER NO.:			
SITE:	Swartz Barracks		

*INVOICE TO: *(client default if nil)* — ☑ CC Invoice to PM

*EMAIL REPORTS TO: *(default to PM if blank)* [redacted]

BIOSECURITY

Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS** *Please check box →*

Standard Storage time from receipt of samples:
Waters - 3 weeks
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☑ Standard Storage
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Specify Disposal Date:

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☑ 5+ days (no surcharge)
☐ 3 day (+15%)
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(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

WO Sticker to go here.
(ALS use only)

Comments: EB2432603 Batch 2 - 17 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W), Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)	Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
—	0207_QC206-241010		10/10/24	2	W				X							☐	☐	Send to Envirolab
20	0207_QC503-241011		11/10/24	2	W				X							☐	☐	Trip Blank
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	

Receipt Detail (Lab Use ONLY)
Chilling Method: Ice: Frozen / Melted — Ice Bricks: Frozen / Thawed — None
Sample Temp at Receipt: °C °C °C
Security Seal Intact *(circle)*: Yes / No / NA(None)
Carrier Details: ☐ Courier/Post ☐ Client
Con Note #
Packaging: *(Circle)* Hard Esky Foam Esky Box/Bag/Other
Count # # #

Relinquished by: [redacted] Date/Time: 11/10/24
Relinquished by: Signature: Date/Time:
Received by: Signature Date/Time:
Received by: Signature Date/Time:

GHD Pty Ltd QLD
145 Ann Street
Brisbane
QLD 4000

NATA Accredited
Accreditation Number 1261
Site Number 20794 & 2780

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: [redacted]

Report **1148785-W**
Project name SWARTZ BARRACKS
Project ID 12638013 SWARTZ BARRACKS LC
Received Date Oct 15, 2024

Client Sample ID			**0207_QC205_241010**	**0207_QC206_241010**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**B24-Oc0032878**	**B24-Oc0032879**
Date Sampled			**Oct 10, 2024**	**Oct 10, 2024**
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.12	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.19	0.04
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.79	0.20
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.10	[N09]0.03
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.14	[N09]0.04
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	93	51
13C5-PFPeA (surr.)	1	%	131	75
13C5-PFHxA (surr.)	1	%	93	64
13C4-PFHpA (surr.)	1	%	142	81
13C8-PFOA (surr.)	1	%	110	66
13C5-PFNA (surr.)	1	%	148	61
13C6-PFDA (surr.)	1	%	93	50
13C2-PFUnDA (surr.)	1	%	147	70
13C2-PFDoDA (surr.)	1	%	112	57
13C2-PFTeDA (surr.)	1	%	103	52
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	110	52
D3-N-MeFOSA (surr.)	1	%	83	41

Client Sample ID			0207_QC205_241010	0207_QC206_241010
Sample Matrix			Water	Water
Eurofins Sample No.			B24-Oc0032878	B24-Oc0032879
Date Sampled			Oct 10, 2024	Oct 10, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D5-N-EtFOSA (surr.)	1	%	92	47
D7-N-MeFOSE (surr.)	1	%	79	42
D9-N-EtFOSE (surr.)	1	%	90	44
D5-N-EtFOSAA (surr.)	1	%	102	54
D3-N-MeFOSAA (surr.)	1	%	93	41
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.44	0.11
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.18	0.04
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.42	[N09]0.11
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]2.3	[N09]0.78
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	[N09]0.11	[N09]0.06
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]2.4	[N09]0.44
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	89	57
18O2-PFHxS (surr.)	1	%	144	50
13C8-PFOS (surr.)	1	%	133	56
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	104	49
13C2-6:2 FTSA (surr.)	1	%	115	41
13C2-8:2 FTSA (surr.)	1	%	92	35
13C2-10:2 FTSA (surr.)	1	%	87	40
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	4.7	1.22
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	2.54	0.48
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	4.84	1.26
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	6.48	1.64
Sum of PFASs (n=30)*	0.1	ug/L	7.19	1.85

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Oct 16, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Company Name: GHD Pty Ltd QLD
Address: 145 Ann Street
Brisbane
QLD 4000

Project Name: SWARTZ BARRACKS
Project ID: 12638013 SWARTZ BARRACKS LC

Order No.:
Report #: 1148785
Phone: 07 3316 3000
Fax: 07 3316 3333

Received: Oct 15, 2024 8:29 AM
Due: Oct 22, 2024
Priority: 5 Day
Contact Name: [redacted]

Eurofins Analytical Services Manager : [redacted]

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Brisbane Laboratory - NATA # 1261 Site # 20794 & 2780						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	0207_QC205_241010	Oct 10, 2024		Water	B24-Oc0032878	X
2	0207_QC206_241010	Oct 10, 2024		Water	B24-Oc0032879	X
Test Counts						2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	100			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	111			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	88			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	94			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	91			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	124			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	104			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	90			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	94			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	111			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	86			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	101			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	121			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	111			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	115			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	97			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	84			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	99			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	142			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	102			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B24-Oc0032848	NCP	%	121			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0032848	NCP	%	800			50-150	Fail	J01
Perfluorohexanoic acid (PFHxA)	B24-Oc0032848	NCP	%	4.0			50-150	Fail	J01
Perfluoroheptanoic acid (PFHpA)	B24-Oc0032848	NCP	%	132			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0032848	NCP	%	149			50-150	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0032848	NCP	%	102			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0032848	NCP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0032848	NCP	%	104			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0032848	NCP	%	120			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0032848	NCP	%	117			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0032848	NCP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B24-Oc0032848	NCP	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0032848	NCP	%	111			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0032848	NCP	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0032848	NCP	%	125			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0032848	NCP	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0032848	NCP	%	106			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0032848	NCP	%	105			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0032848	NCP	%	134			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0032848	NCP	%	119			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0032848	NCP	%	129			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0032848	NCP	%	124			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0032848	NCP	%	1200			50-150	Fail	J01
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0032848	NCP	%	225			50-150	Fail	J01
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0032848	NCP	%	115			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0032848	NCP	%	72			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0032848	NCP	%	125			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0032848	NCP	%	471			50-150	Fail	J01
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0032848	NCP	%	128			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0032848	NCP	%	99			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B24-Oc0032879	CP	ug/L	0.04	0.04	3.0	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B24-Oc0032879	CP	ug/L	0.20	0.16	23	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B24-Oc0032879	CP	ug/L	0.03	0.02	23	30%	Pass	
Perfluorooctanoic acid (PFOA)	B24-Oc0032879	CP	ug/L	0.04	0.04	20	30%	Pass	
Perfluorononanoic acid (PFNA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B24-Oc0032879	CP	ug/L	0.11	0.08	27	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B24-Oc0032879	CP	ug/L	0.04	0.03	10	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B24-Oc0032879	CP	ug/L	0.11	0.09	21	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B24-Oc0032879	CP	ug/L	0.78	0.60	26	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B24-Oc0032879	CP	ug/L	0.06	0.05	24	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B24-Oc0032879	CP	ug/L	0.44	0.37	16	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	B24-Oc0032879	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B24-Oc0032879	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
J01	Failures of the Matrix Spike (MS) due to the presence of analytes(s) in parent sample at > 3X the spike concentration.
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

[redacted] Analytical Services Manager

[redacted] Senior Analyst-PFAS

[redacted]

[redacted]

Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: GHD Pty Ltd QLD
Contact name: [redacted]
Project name: SWARTZ BARRACKS
Project ID: 12638013 SWARTZ BARRACKS LC
Turnaround time: 5 Day
Date/Time received Oct 15, 2024 8:29 AM
Eurofins reference 1148785

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 8.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

[redacted]

Results will be delivered electronically via email to [redacted]

Note: A copy of these results will also be delivered to the general GHD Pty Ltd QLD email address.

CHAIN OF CUSTODY

CoC #: *(if applicable)*

Mandatory Fields

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
*INVOICE TO: *(client default if nil)*			
*EMAIL REPORTS TO: *(default to PM if blank)*	[redacted]		

SAMPLER:	[redacted]
SAMPLER MOBILE:	[redacted]
PURCHASE ORDER NO.:	
SITE:	Swartz Barracks

☑ CC Invoice to PM

BIOSECURITY

Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS** *Please check box →*

☑ Standard Storage
☐ Extended Storage

Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** *Please check box →*

(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Date/Time:
Chilled: Yes / No
Temp:
Correction:
Final Temp:

WO Sticker to go here.
(ALS use only)

1248785

Comments: EB2432603 Batch 2 - 17 primary water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)	Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432603-11	0207_MW573_S_241010		10/10/24	2	W				X							☐	☐	Incorrectly labelled. Please amend to S.
EB2432603-12	0207_MW574_S_241008		8/10/24	2	W				X							☐	☐	
EB2432603-13	0207_MW574_D_241008		8/10/24	2	W				X							☐	☐	
EB2432603-14	0207_MW575_241010		8/10/24	2	W				X							☐	☐	
EB2432603-15	0207_MW576_241010		10/10/24	2	W				X							☐	☐	
EB2432603-16	0207_MW577_241010		10/10/24	2	W				X							☐	☐	
EB2432603-17	0207_MW578_241008		8/10/24	4	W				X							☑	☐	
18	0207_QC105_241010		10/10/24	2	W				X							☐	☐	
-	0207_QC205_241010		10/10/24	2	W				X							☐	☐	send to Eurofins
19	0207_QC106_241010		10/10/24	2	W				X							☐	☐	

Receipt Detail (Lab Use ONLY)	Chilling Method:	Ice: Frozen / Melted	Ice Bricks: Frozen / Thawed	None	Sample Temp at Receipt: °C °C °C
Security Seal Intact *(circle)*	Yes / No / NA(None)	Carrier Details	☐ Courier/Post	☐ Client	Con Note #
Packaging: *(Circle)*	Hard Esky	Foam Esky	Box/Bag/Other		
Count	#	#	#		

Relinquished by: [redacted]	Signature: [redacted]	Date/Time: 11/10/24	Received by: Signature: Date/Time:
Relinquished by: [redacted]	Signature:	Date/Time:	Received by: Signature: Date/Time:

CHAIN OF CUSTODY

CoC #: *(if applicable)*

Mandatory Fields

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
*INVOICE TO: *(client default if nil)*			
*EMAIL REPORTS TO: *(default to PM if blank)*	[redacted]		

SAMPLER: [redacted]
SAMPLER MOBILE:
PURCHASE ORDER NO.:
SITE: Swartz Barracks
☑ CC Invoice to PM

BIOSECURITY
Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS**
Please check box →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box →
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

WO Sticker to go here.
(ALS use only)

Comments: EB2432603 Batch 2 - 17 primary water samples

ALS Use Only / Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S), Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)	Lab QC (additional bottles req.) Dup	Lab QC MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
—	0207_QC206-241010		10/10/24	2	W				X							☐	☐	send to Eurofins
20	0207_QC503-241011		11/10/24	2	W				X							☐	☐	Trip Blank
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	

Receipt Detail (Lab Use ONLY)
Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None
Sample Temp at Receipt °C °C °C
Security Seal Intact (circle) Yes / No / NA(None)
Carrier Details ☐ Courier/Post ☐ Client
Con Note #
Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other
Count # # #

Relinquished by: [redacted] Signature: [redacted] Date/Time: 11/10/24
Relinquished by: [redacted] Signature: Date/Time:
Received by: Signature Date/Time:
Received by: Signature Date/Time:

Outlook

RE: Eurofins Sample Receipt Advice - Report 1148776 : Site SWARTZ BARRACKS (12638013 SWARTZ BARRACKS LC)

From [redacted]
Date Tue 15/10/24 8:29 AM
To #AU03_EnviroSampleBris <EnviroSampleBris@eurofins.com>
Cc [redacted]

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi there,

Please analyse all samples for PFAS standard suite. This will apply to:

- 1148776
- 1148776
- 1148785

[redacted]

GHD
Proudly employee-owned | ghd.com
230 Harbour Drive, Coffs Harbour, NSW, 2450, Australia
[redacted]

The Power of Commitment

Connect

Please consider the environment before printing this email

From: envirosamplebris@eurofins.com <envirosamplebris@eurofins.com>
Sent: Monday, 14 October 2024 6:00 PM
To: [redacted]
Cc: [redacted]
Subject: Eurofins Sample Receipt Advice - Report 1148776 : Site SWARTZ BARRACKS (12638013 SWARTZ BARRACKS LC)

Dear [redacted]
Please advise testing for all the samples. They have been put on hold.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432605**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:19
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: The LOR for PFBS has been raised in sample '0207_MW257_241009' (EB2432605-002) due to matrix interference.
- EP231X PFAS: Whole bottle extraction was not possible for sample '0207_MW276_241009' (EB2432605-005). Sample required dilution prior to extraction due to high-level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standard recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- 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	0207_MW257_241009	0207_MW262_241009	0207_MW272_241009	0207_MW276_241009	0207_QC504_241011 Trip Blank
			Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	11-Oct-2024 00:00
Compound	CAS Number	LOR	Unit	EB2432605-002	EB2432605-003	EB2432605-004	EB2432605-005	EB2432605-006
				Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.05	**0.10**	**0.07**	**0.83**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	**0.07**	**0.08**	**0.90**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.10**	**0.36**	**0.44**	**6.42**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	**0.03**	<0.02	**0.34**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.13**	**0.38**	**0.14**	**9.10**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	**0.3**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	**0.02**	**0.28**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	**0.07**	**0.10**	**1.32**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	**0.02**	<0.02	**0.22**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	**0.04**	**0.02**	**0.46**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.12	<0.05
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	<0.05	<0.05	<0.12	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.05	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW257_241009	0207_MW262_241009	0207_MW272_241009	0207_MW276_241009	0207_QC504_241011 Trip Blank
				Sampling date / time	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	09-Oct-2024 00:00	11-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432605-002	EB2432605-003	EB2432605-004	EB2432605-005	EB2432605-006
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<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		<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		**0.23**	**1.07**	**0.87**	**20.2**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.23**	**0.74**	**0.58**	**15.5**	<0.01
Sum of PFAS (WA DER List)	---	0.01	µg/L		**0.23**	**0.97**	**0.79**	**19.0**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	---	0.02	%		**88.9**	**90.4**	**95.1**	**84.6**	**108**
13C8-PFOA	---	0.02	%		**102**	**95.1**	**96.4**	**93.7**	**101**

Surrogate Control Limits

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432605**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 21-Oct-2024
Sampler	: [redacted]	No. of samples received	: 5
Order number	: ----	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.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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	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)								
0207_MW257_241009,	0207_MW262_241009,	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
0207_MW272_241009,	0207_MW276_241009							
HDPE (no PTFE) (EP231X)								
0207_QC504_241011 - Trip Blank		**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW257_241009,	0207_MW262_241009,	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
0207_MW272_241009,	0207_MW276_241009							
HDPE (no PTFE) (EP231X)								
0207_QC504_241011 - Trip Blank		**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0207_MW257_241009,	0207_MW262_241009,	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
0207_MW272_241009,	0207_MW276_241009							
HDPE (no PTFE) (EP231X)								
0207_QC504_241011 - Trip Blank		**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW257_241009,	0207_MW262_241009,	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
0207_MW272_241009,	0207_MW276_241009							
HDPE (no PTFE) (EP231X)								
0207_QC504_241011 - Trip Blank		**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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) 0207_MW257_241009, 0207_MW262_241009, 0207_MW272_241009, 0207_MW276_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC504_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432605**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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: **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: 6119448)									
EB2432605-005	0207_MW276_241009	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	0207_MW276_241009	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									

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: 6119448) - continued									
EB2432605-005	0207_MW276_241009	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	0207_MW276_241009	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

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: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	100	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	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	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								

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: 6119448) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

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: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	95.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued							
EB2432640-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432605**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	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 be advised that sample ALS ID#1 "0207_MW255_2410" was not received at the laboratory.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432605-006 : [11-Oct-2024] : 0207_QC504_241011 - Trip Blank

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 (31 analytes)
EB2432605-002	09-Oct-2024 00:00	0207_MW257_241009	✓
EB2432605-003	09-Oct-2024 00:00	0207_MW262_241009	✓
EB2432605-004	09-Oct-2024 00:00	0207_MW272_241009	✓
EB2432605-005	09-Oct-2024 00:00	0207_MW276_241009	✓
EB2432605-006	11-Oct-2024 00:00	0207_QC504_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- Electronic SRN for ESdat (ESRN_ESDAT) Email

[redacted]

CHAIN OF CUSTODY

Mandatory Fields

Page 1 of 1

CoC #: (if applicable)

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank)	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
*INVOICE TO: (client default if nil)			
*EMAIL REPORTS TO: (default to PM if blank)	[redacted]		

SAMPLER:	[redacted]
SAMPLER MOBILE:	
PURCHASE ORDER NO.:	
SITE:	Swartz Barracks

☑ CC Invoice to PM

BIOSECURITY

Country of Origin: (if not Australia)

*** STORAGE REQUIREMENTS**
Please check box. →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box. →
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432605 Batch 3 - 5 primay water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432605-1	~~0207_MW255_2410~~																	☐	☐	Not sampled
EB2432605-2	0207_MW257_2410 09		9/10/24	2	W				X									☐	☐	
EB2432605-3	0207_MW262_2410 09		9/10/24	2	W				X									☐	☐	
EB2432605-4	0207_MW272_2410 09		9/10/24	2	W				X									☐	☐	
EB2432605-5	0207_MW276_2410 09		9/10/24	~~4~~	W				X									☑	☐	
	0207_~~DC~~504-24104		11/10/24	2	W				X									☐	☐	Trip Blank
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

BIOSECURITY

Environmental Division Brisbane
Work Order Reference
EB2432605

eleonore : ~ 61-7-3552-8685

Receipt Detail (Lab Use ONLY)	Chilling Method:	Ice: Frozen / Melted	Ice Bricks: Frozen / Thawed	None	Sample Temp at Receipt: °C °C °C
Security Seal Intact (circle)	Yes / No / NA(None)	Carrier Details	☐ Courier/Post	☐ Client	Con Note #
Packaging: (Circle)	Hard Esky	Foam Esky	Box/Bag/Other	Count	# # #

Relinquished by:	[redacted]	Date/Time:	11/10/24	Received by:	[redacted]
Relinquished by:	Signature:	Date/Time:		Received by:	11/10/24 Signature 1447 Signature
					Date/Time:
					Date/Time:

Mandatory Fields

CHAIN OF CUSTODY

Page ___of___

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:		SAMPLER:	
*CLIENT:	GHD PTY LTD	*PM MOBILE:		SAMPLER MOBILE:	
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4	PURCHASE ORDER NO.:	
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC			SITE:	Swartz Barracks

*INVOICE TO: *(client default if nil)* ☐ CC Invoice to PM

*EMAIL REPORTS TO: *(default to PM if blank)*

BIOSECURITY

Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS**
Please check box. →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☐ Standard Storage
☐ Extended Storage
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box →
(Not all tests can be expedited, contact Client Services for more information)

☐ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

WO Sticker to go here.
(ALS use only)

Comments: EB2432605 Batch 3 - 5 primay water samples

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC *(additional bottles req.)* Dup	Lab QC *(additional bottles req.)* MS	Additional Information *(Comment on hazards - e.g., asbestos, known high contamination)*
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY)	Chilling Method:	Ice: Frozen / Melted	Ice Bricks: Frozen / Thawed	None	Sample Temp at Receipt °C °C °C
Security Seal Intact *(circle)*	Yes / No / NA(None)	Carrier Details	☐ Courier/Post	☐ Client	Con Note #
Packaging: *(Circle)*	Hard Esky	Foam Esky	Box/Bag/Other		
Count	#	#	#		

Relinquished by:		Signature:		Date/ Time:	
Relinquished by:		Signature:		Date/ Time:	
Received by:		Signature		Date/ Time:	
Received by:		Signature		Date/ Time:	

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432615**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:25
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: Samples '0207_MW003_241009' (EB2432615-001) and '0207_QC505_241011' (EB2432615-002) showed matrix interference incicated by internal standard recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- 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	0207_MW003_241009	0207_QC505_241011 Trip Blank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432615-001	EB2432615-002	-------	-------	-------
					Result	Result	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW003_241009	0207_QC505_241011 Trip Blank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432615-001	EB2432615-002	-------	-------	-------
					Result	Result	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.6**	**82.9**	----	----	----
13C8-PFOA	----	0.02	%		**94.2**	**93.7**	----	----	----

Surrogate Control Limits

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432615**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 21-Oct-2024
Sampler	: [redacted]	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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	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) 0207_MW003_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC505_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW003_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC505_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW003_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC505_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW003_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC505_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW003_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC505_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432615**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This 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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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: **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: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									

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: 6119448) - continued									
EB2432605-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	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

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: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	100	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	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	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								

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: 6119448) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

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: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	95.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued							
EB2432640-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2432615**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	:
E-mail	: [redacted]	E-mail	:
Telephone	:	Telephone	:
Facsimile	:	Facsimile	:
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 6.3, 4.8°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432615-002 : [11-Oct-2024] : 0207_QC505_241011 - Trip Blank

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 (31 analytes)
EB2432615-001	09-Oct-2024 00:00	0207_MW003_241009	✓
EB2432615-002	11-Oct-2024 00:00	0207_QC505_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email
- Electronic SRN for ESdat (ESRN_ESDAT) — Email

[redacted]

CHAIN OF CUSTODY

Mandatory Fields

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
*INVOICE TO: *(client default if nil)*			
*EMAIL REPORTS TO: *(default to PM if blank)*	[redacted]		

SAMPLER:	[redacted]
SAMPLER MOBILE:	[redacted]
PURCHASE ORDER NO.:	
SITE:	Swartz Barracks

☑ CC Invoice to PM

BIOSECURITY

Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS** *Please check box →*

Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** *Please check box →*

(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Environmental Division Brisbane
Work Order Reference
EB2432615

Telephone : +61-7-3552-8685

Comments: EB2432615 Batch 4 - 1 primary water sample

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targetec)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)	Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432615-1	0207_MW003_241009		9/10/24	2	W				X							☐	☐	
2	0207-QC505-241011		11/10/24	2	W				X							☐	☐	TMP Blank
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	
																☐	☐	

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: Frozen / Melted — Ice Bricks: Frozen / Thawed — None

Sample Temp at Receipt: °C °C °C

Security Seal Intact *(circle)*: Yes / No / NA(None)

Carrier Details: ☐ Courier/Post ☐ Client

Con Note #

Packaging: *(Circle)* Hard Esky Foam Esky Box/Bag/Other

Count # # #

Relinquished by:	[redacted]	Date/Time:	11/10/24	Received by: [redacted]	Signature 11/10/24 1457
Relinquished by:	Signature:	Date/Time:		Received by:	Signature Date/Time:

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432621**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:28
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: Samples '0207_MW019_241009' (EB2432621-001) and '0207_QC506_241011' (EB2432621-002) showed matrix interference incicated by internal standard recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- 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	0207_MW019_241009	0207_QC506_241011 Trip Blank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432621-001	EB2432621-002	-------	-------	-------
					Result	Result	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.05**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW019_241009	0207_QC506_241011 Trip Blank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432621-001	EB2432621-002	-------	-------	-------
					Result	Result	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.07**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.07**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**105**	**94.8**	----	----	----
13C8-PFOA	----	0.02	%		**95.5**	**93.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432621**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	[redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 21-Oct-2024
Sampler	[redacted]	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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	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) 0207_MW019_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC506_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW019_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC506_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW019_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC506_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW019_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC506_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW019_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC506_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432621**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	[redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This 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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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: **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: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									

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: 6119448) - continued									
EB2432605-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	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

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: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	100	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	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	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								

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: 6119448) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

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: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	95.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued							
EB2432640-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432621**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	[redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	[redacted]	E-mail	[redacted]
Telephone	[redacted]	Telephone	[redacted]
Facsimile	: ----	Facsimile	[redacted]
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	[redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432621-002 : [11-Oct-2024] : 0207_QC506_241011 - Trip Blank

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 (31 analytes)
EB2432621-001	09-Oct-2024 00:00	0207_MW019_241009	✓
EB2432621-002	11-Oct-2024 00:00	0207_QC506_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email
- Electronic SRN for ESdat (ESRN_ESDAT) — Email

[redacted]

CHAIN OF CUSTODY

Mandatory Fields

Page 1 of 1

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
SAMPLER:	[redacted]		
SAMPLER MOBILE:	[redacted]		
PURCHASE ORDER NO.:			
SITE:	Swartz Barracks		

*INVOICE TO: *(client default if nil)* [redacted] ☑ CC Invoice to PM

*EMAIL REPORTS TO: *(default to PM if blank)* [redacted]

BIOSECURITY

Country of Origin: *(if not Australia)*

Environmental Division Brisbane
Work Order Reference
EB2432621

Telephone - 61-7-3552-8666

*** STORAGE REQUIREMENTS** *Please check box →*
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage
Specify Disposal Date:
Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** *Please check box →*
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432621 Batch 5 - 1 primary water sample

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432621-1	0207_MW019_2410[illegible]09		9/10/24	2	W				X									☐	☐	
2	0207_QCS06_241011		11/10/24	2	W				X									☐	☐	Trip Blank
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY)
Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None
Sample Temp at Receipt °C °C °C
Security Seal Intact (circle) Yes / No / NA(None)
Carrier Details ☐ Courier/Post ☐ Client
Con Note #
Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other
Count # # #

Relinquished by:	[redacted]	Date/Time:	11/10/24	Received by:	[redacted]
Relinquished by:	Signature:	Date/Time:		Received by:	Signature

Signature 11/10/24
Date/Time: 1442

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432633**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: 12638013	Date Samples Received	: 03-Oct-2024 12:00
Order number	: ----	Date Analysis Commenced	: 03-Oct-2024
C-O-C number	: ----	Issue Date	: 10-Oct-2024 13:18
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
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]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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)

Compound	CAS Number	LOR	Unit	Sample ID	0207_MW038_241001	0207_QC101_241001	0207_QC201_241001	0207_QC301_241001 Rinsate	0207_QC501_241001 Trip Blank
				Sampling date / time	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00
					EB2432633-001	EB2432633-002	EB2432633-003	EB2432633-004	EB2432633-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.05**	**0.05**	**0.06**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	**0.05**	**0.05**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.33**	**0.32**	**0.32**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.02**	**0.02**	**0.03**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.70**	**0.66**	**0.71**	<0.01	<0.01
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.06**	**0.06**	**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		**0.04**	**0.04**	**0.04**	<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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW038_241001	0207_QC101_241001	0207_QC201_241001	0207_QC301_241001 Rinsate	0207_QC501_241001 Trip Blank
				Sampling date / time	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432633-001	EB2432633-002	EB2432633-003	EB2432633-004	EB2432633-005
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	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
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	---	0.01	µg/L		**1.25**	**1.20**	**1.27**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.03**	**0.98**	**1.03**	<0.01	<0.01
Sum of PFAS (WA DER List)	---	0.01	µg/L		**1.18**	**1.13**	**1.19**	<0.01	<0.01
EP231S: PFAS Surrogate									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW038_241001	0207_QC101_241001	0207_QC201_241001	0207_QC301_241001 Rinsate	0207_QC501_241001 Trip Blank
				Sampling date / time	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00	01-Oct-2024 00:00
Compound	CAS Number	LOR	Unit		EB2432633-001	EB2432633-002	EB2432633-003	EB2432633-004	EB2432633-005
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C4-PFOS	---	0.02	%		93.2	92.5	97.4	89.8	88.7
13C8-PFOA	---	0.02	%		95.9	96.4	96.1	78.0	83.0

Surrogate Control Limits

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432633**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013	Date Samples Received	: 03-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 10-Oct-2024
Sampler	: [redacted]	No. of samples received	: 5
Order number	: ----	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.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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	25	4.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	25	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)								
0207_QC301_241001 - Rinsate,	0207_QC501_241001 - Trip Blank	**01-Oct-2024**	**04-Oct-2024**	30-Mar-2025	✓	**04-Oct-2024**	30-Mar-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW038_241001, 0207_QC201_241001	0207_QC101_241001,	**01-Oct-2024**	**08-Oct-2024**	30-Mar-2025	✓	**08-Oct-2024**	30-Mar-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0207_QC301_241001 - Rinsate,	0207_QC501_241001 - Trip Blank	**01-Oct-2024**	**04-Oct-2024**	30-Mar-2025	✓	**04-Oct-2024**	30-Mar-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW038_241001, 0207_QC201_241001	0207_QC101_241001,	**01-Oct-2024**	**08-Oct-2024**	30-Mar-2025	✓	**08-Oct-2024**	30-Mar-2025	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0207_QC301_241001 - Rinsate,	0207_QC501_241001 - Trip Blank	**01-Oct-2024**	**04-Oct-2024**	30-Mar-2025	✓	**04-Oct-2024**	30-Mar-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW038_241001, 0207_QC201_241001	0207_QC101_241001,	**01-Oct-2024**	**08-Oct-2024**	30-Mar-2025	✓	**08-Oct-2024**	30-Mar-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0207_QC301_241001 - Rinsate,	0207_QC501_241001 - Trip Blank	**01-Oct-2024**	**04-Oct-2024**	30-Mar-2025	✓	**04-Oct-2024**	30-Mar-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW038_241001, 0207_QC201_241001	0207_QC101_241001,	**01-Oct-2024**	**08-Oct-2024**	30-Mar-2025	✓	**08-Oct-2024**	30-Mar-2025	✓

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)								
0207_QC301_241001 - Rinsate,	0207_QC501_241001 - Trip Blank	**01-Oct-2024**	**04-Oct-2024**	30-Mar-2025	✓	**04-Oct-2024**	30-Mar-2025	✓
HDPE (no PTFE) (EP231X)								
0207_MW038_241001, 0207_QC201_241001	0207_QC101_241001,	**01-Oct-2024**	**08-Oct-2024**	30-Mar-2025	✓	**08-Oct-2024**	30-Mar-2025	✓

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	25	**4.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	25	**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.

QUALITY CONTROL REPORT

Work Order	: **EB2432633**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	[redacted]
Project	: 12638013	Date Samples Received	: 03-Oct-2024
Order number	: ----	Date Analysis Commenced	: 03-Oct-2024
C-O-C number	: ----	Issue Date	: 10-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
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]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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: 6104450)									
EB2432633-001	0207_MW038_241001	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.33	0.34	0.0	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.70	0.74	4.7	0% - 20%
		EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.05	0.06	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.02	0.03	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	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: 6104450)									
EB2432633-001	0207_MW038_241001	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.04	0.04	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	0.06	0.06	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	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: 6104450)									

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: 6104450) - continued									
EB2432633-001	0207_MW038_241001	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6104450)									
EB2432633-001	0207_MW038_241001	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

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: 6098342)								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	0.25 µg/L	87.4	60.0	140
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	85.7	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	101	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	87.6	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	100	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	80.2	65.0	140
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	0.25 µg/L	75.4	60.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	78.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6104450)								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	0.25 µg/L	138	60.0	140
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	129	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	124	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	124	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	132	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	123	65.0	140
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	0.25 µg/L	100	60.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	132	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6098342)								
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	84.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	79.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	94.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	99.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	100	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	87.0	46.1	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
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6104450)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	120	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	126	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	129	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	128	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	133	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	133	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	132	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	130	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	115	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6098342)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	83.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	112	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	79.9	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	87.0	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	81.4	62.6	138
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	109	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6104450)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	104	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	112	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	120	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	116	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	118	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6098342)								

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: 6098342) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	114	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	83.3	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	70.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	108	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6104450)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	125	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	112	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	119	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	122	64.2	133

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.**

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432633**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks		
Sampler	: [redacted]		

Dates

Date Samples Received	: 03-Oct-2024 12:00	Issue Date	: 03-Oct-2024
Client Requested Due Date	: 11-Oct-2024	Scheduled Reporting Date	: **11-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 14.1, 15.6, 15.9°C
Receipt Detail	: HARD ESKY	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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432633-004 : [01-Oct-2024] : 0207_QC301_241001 - Rinsate
EB2432633-005 : [01-Oct-2024] : 0207_QC501_241001 - Trip Blank

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 (31 analytes)
EB2432633-001	01-Oct-2024 00:00	0207_MW038_241001	✓
EB2432633-002	01-Oct-2024 00:00	0207_QC101_241001	✓
EB2432633-003	01-Oct-2024 00:00	0207_QC201_241001	✓
EB2432633-004	01-Oct-2024 00:00	0207_QC301_241001 R...	✓
EB2432633-005	01-Oct-2024 00:00	0207_QC501_241001 T...	✓

Proactive Holding Time Report

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

Requested Deliverables

Accounts Payable Australia

- A4 - AU Tax Invoice (INV)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	Email

[redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 1

CoC #: (if applicable)

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]	SAMPLER MOBILE:	
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank)	EB24GHDSER0019 V4	PURCHASE ORDER NO.:	
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC			SITE:	Swartz Barracks
*INVOICE TO: (client default if nil)				☐ CC Invoice to PM	
*EMAIL REPORTS TO: (default to PM if blank)	[redacted]				

BIOSECURITY

Country of Origin: (if not Australia)

Environmental Division Brisbane
Work Order Reference
EB2432633

Telephone : +61-7-3552-6886

*** STORAGE REQUIREMENTS** (Please check box →)
Standard Storage time from receipt of samples: Waters - 3 weeks, Soils - 2 months

- ☑ Standard Storage
- ☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** (Please check box →) (Not all tests can be expedited, contact Client Services for more information)

- ☑ 5+ days (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432633 Batch 6 - 1 primary water sample

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432633-1	0207_MW038_241001		1/10/24	6	W				X									☑	☑	Lab QC
2	0207_QC101-241001		↓	2	↓				X									☐	☐	
3	0207-QC201-241001			2					X									☐	☐	
4	0207_QC301-241001			2					X									☐	☐	Rinsate
5	0207_QC501-241001		✓	2	✓				X									☐	☐	Trip Blank
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY)	Chilling Method:	Ice: Frozen / Melted	Ice Bricks: Frozen / Thawed	None	Sample Temp at Receipt	°C °C °C	Security Seal Intact (circle) Yes / No / NA(None)

Carrier Details: ☐ Courier/Post ☐ Client
Con Note #

Packaging: (Circle) Hard Esky / Foam Esky / Box/Bag/Other
Count # # #

Relinquished by:	Signature:	Date/ Time:	Received by: [redacted] Signature: [redacted] Date/ Time: 3/10/24
Relinquished by:	Signature:	Date/ Time:	Received by: Signature Date/ Time: 12:00

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432638**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	:
Telephone	: [redacted]	Telephone	:
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:30
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: Samples '0207_MW134_241009' (EB2432638-001) and '0207_QC507_241011' (EB2432638-002) showed matrix interference incicated by internal standard recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- 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	0207_MW134_241009	0207_QC507_241011 Trip Blank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432638-001	EB2432638-002	-------	-------	-------
					Result	Result	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.10**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.10**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW134_241009	0207_QC507_241011 Trip Blank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432638-001	EB2432638-002	----	----	----
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.20**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.20**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.20**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.8**	**94.1**	----	----	----
13C8-PFOA	----	0.02	%		**100**	**97.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432638**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 21-Oct-2024
Sampler	: [redacted]	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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	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) 0207_MW134_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC507_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW134_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC507_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW134_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC507_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW134_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC507_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW134_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC507_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432638**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This 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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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: **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: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									

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: 6119448) - continued									
EB2432605-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	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

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: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	100	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	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	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								

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: 6119448) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

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: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	95.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued							
EB2432640-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432638**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432638-002 : [11-Oct-2024] : 0207_QC507_241011 - Trip Blank

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 (31 analytes)
EB2432638-001	09-Oct-2024 00:00	0207_MW134_241009	✓
EB2432638-002	11-Oct-2024 00:00	0207_QC507_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- A4 - AU Tax Invoice (INV)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - ESDAT (ESDAT)	Email
- Electronic SRN for ESdat (ESRN_ESDAT)	Email

[redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 1

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:		SAMPLER MOBILE:	
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4	PURCHASE ORDER NO.:	
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC			SITE:	Swartz Barracks

*INVOICE TO: *(client default if nil)* [redacted] ☑ CC Invoice to PM

*EMAIL REPORTS TO: *(default to PM if blank)* [redacted]

BIOSECURITY

Country of Origin: *(if not Australia)*

Environmental Division Brisbane
Work Order Reference
EB2432638

Telephone : +61-7-3552-8685

*** STORAGE REQUIREMENTS** *Please check box →*

- ☑ Standard Storage
- ☐ Extended Storage

Standard Storage time from receipt of samples: Waters - 3 weeks, Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** *Please check box →*

(Not all tests can be expedited, contact Client Services for more information)

- ☑ 5+ days (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432638 batch 8 - 1 primary water sample

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432638-1	0207_MW134_241009		9/10/24	2	W				X									☐	☐	
	0207_QC507_241011		11/10/24	2	W				X									☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY): Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None

Sample Temp at Receipt: °C °C °C

Security Seal Intact *(circle)*: Yes / No / NA(None)

Carrier Details: ☐ Courier/Post ☐ Client

Con Note #

Packaging: *(Circle)* Hard Esky Foam Esky Box/Bag/Other

Count # # #

Relinquished by:	[redacted]	Date/Time:	11/10/24	Received by:	[redacted]
Signature:		Date/Time:		Signature	11/10/24
Relinquished by:		Signature:		Received by:	
		Date/Time:		Signature	
				Date/Time:	1447

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432640**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	:
Telephone	: [redacted]	Telephone	:
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:24
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 3		
No. of samples analysed	: 3		

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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: Particular samples showed matrix interference indicated by internal standarc recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- 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	0207_MW147_241011	0207_QC305_241011	0207_QC509_241011 Trip Bank	----	----
			Sampling date / time	11-Oct-2024 00:00	11-Oct-2024 00:00	11-Oct-2024 00:00	----	----
Compound	CAS Number	LOR	Unit	EB2432640-001	EB2432640-002	EB2432640-003	--------	--------
				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	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	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	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW147_241011	0207_QC305_241011	0207_QC509_241011 Trip Bank	----	----
				Sampling date / time	11-Oct-2024 00:00	11-Oct-2024 00:00	11-Oct-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2432640-001	EB2432640-002	EB2432640-003	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
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	%		106	92.3	108	----	----
13C8-PFOA	----	0.02	%		94.3	103	101	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432640**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 21-Oct-2024
Sampler	: [redacted]	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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, where applicable to the methodology, 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	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) 0207_MW147_241011, 0207_QC305_241011, 0207_QC509_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW147_241011, 0207_QC305_241011, 0207_QC509_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW147_241011, 0207_QC305_241011, 0207_QC509_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW147_241011, 0207_QC305_241011, 0207_QC509_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW147_241011, 0207_QC305_241011, 0207_QC509_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432640**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	[redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 3		
No. of samples analysed	: 3		

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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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: **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: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									

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: 6119448) - continued									
EB2432605-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	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

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: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	100	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	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	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								

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: 6119448) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

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: 6119448)							
EB2432640-001	0207_MW147_241011	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	0207_MW147_241011	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	95.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	0207_MW147_241011	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued							
EB2432640-001	0207_MW147_241011	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	0207_MW147_241011	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432640**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 14-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 3 / 3

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
- **14/10/2024: SRN has been resent to acknowledge Changing MW134 to MW147 as per COC For any further information regarding these adjustments please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432640-003 : [11-Oct-2024] : 0207_QC509_241011 - Trip Bank

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 (31 analytes)
EB2432640-001	11-Oct-2024 00:00	0207_MW147_241011	✓
EB2432640-002	11-Oct-2024 00:00	0207_QC305_241011	✓
EB2432640-003	11-Oct-2024 00:00	0207_QC509_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- Electronic SRN for ESdat (ESRN_ESDAT)	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
- A4 - AU Tax Invoice (INV)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - ESDAT (ESDAT)	Email
- Electronic SRN for ESdat (ESRN_ESDAT)	Email

CHAIN OF CUSTODY

Mandatory Fields

Page 1 of 1

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		
SAMPLER:	[redacted]		
SAMPLER MOBILE:			
PURCHASE ORDER NO.:			
SITE:	Swartz Barracks		

*INVOICE TO: *(client default if nil)* ☑ CC Invoice to PM

*EMAIL REPORTS TO: *(default to PM if blank)* [redacted]

BIOSECURITY

Country of Origin: *(if not Australia)*

*** STORAGE REQUIREMENTS** *Please check box →*

☑ Standard Storage

☐ Extended Storage

Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** *Please check box →*

(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Environmental Division Brisbane
Work Order Reference
EB2432640

Telephone : +61-7-3552-8685

Comments: EB2432640 batch 9 - 1 primary water sample

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Bioslcle (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432640-1	0207_MW147_241011		11/10/24	4	W				X									☑	☐	
	0207_QC305-241011		11/10/24	2	W				X									☐	☐	
	0207_QC509_241011		11/10/24	2	W				X									☐	☐	Trip Blank
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: Frozen / Melted Ice Bricks: Frozen / Thawed None

Sample Temp at Receipt °C °C °C

Security Seal Intact (circle) Yes / No / NA(None)

Carrier Details ☐ Courier/Post ☐ Client

Con Note #

Packaging: (Circle) Hard Esky Foam Esky Box/Bag/Other

Count # # #

Relinquished by: [redacted] Date/Time: 11/10/24

Relinquished by: Signature: Date/Time:

Received by: [redacted] Signature 11/10/24 Date/Time: 1407

Received by: Signature Date/Time:

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432643**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:23
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: Samples '0207_MW151_241011' (EB2432643-001) and '0207_QC510_241011' (EB2432643-002) showed matrix interference incicated by internal standard recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- 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	0207_MW151_241011	0207_QC510_241011 Trip Blank	----	----	----
			Sampling date / time	11-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2432643-001	EB2432643-002	-------	-------	-------
				Result	Result	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	**0.02**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	**0.03**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW151_241011	0207_QC510_241011 Trip Blank	----	----	----
				Sampling date / time	11-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432643-001	EB2432643-002	-------	-------	-------
					Result	Result	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.05**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.05**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.05**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.0**	**116**	----	----	----
13C8-PFOA	----	0.02	%		**95.3**	**97.8**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432643**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	[redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 21-Oct-2024
Sampler	[redacted]	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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	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)								
0207_MW151_241011,	0207_QC510_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW151_241011,	0207_QC510_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0207_MW151_241011,	0207_QC510_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW151_241011,	0207_QC510_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0207_MW151_241011,	0207_QC510_241011 - Trip Blank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432643**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This 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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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: **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: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									

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: 6119448) - continued									
EB2432605-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	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

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: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	100	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	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	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								

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: 6119448) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

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: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	95.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued							
EB2432640-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432643**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	
Facsimile	: ----	Facsimile	
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432643-002 : [11-Oct-2024] : 0207_QC510_241011 - Trip Blank

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 (31 analytes)
EB2432643-001	11-Oct-2024 00:00	0207_MW151_241011	✓
EB2432643-002	11-Oct-2024 00:00	0207_QC510_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- Electronic SRN for ESdat (ESRN_ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email
- Electronic SRN for ESdat (ESRN_ESDAT) — Email

[redacted]

Mandatory Fields

CHAIN OF CUSTODY

Page 1 of 1

CoC #: *(if applicable)*

CLIENT CODE:	GHDSER	*PROJECT MANAGER:	[redacted]	SAMPLER:	[redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE:	[redacted]	SAMPLER MOBILE:	[redacted]
OFFICE: *(Invoiced Office)*		ALS QUOTE # *(Client PL if blank)*	EB24GHDSER0019 V4	PURCHASE ORDER NO.:	
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC			SITE:	Swartz Barracks
*INVOICE TO: *(client default if nil)*				☑ CC Invoice to PM	
*EMAIL REPORTS TO: *(default to PM if blank)*	[redacted]				

BIOSECURITY

Country of Origin: *(if not Australia)*

Environmental Division
Brisbane
Work Order Reference
EB2432643

Telephone : +61-7-3552-8686

*** STORAGE REQUIREMENTS**
Please check box →
Standard Storage time from receipt of samples:
Waters - 3 weeks
Soils - 2 months

☑ Standard Storage
☐ Extended Storage

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND**
Please check box →
(Not all tests can be expedited, contact Client Services for more information)

☑ 5+ days (no surcharge)
☐ 3 day (+15%)
☐ 2 day (+30%)
☐ 1 day (+50%)

***ANALYSIS REQUIRED**
(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).
Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432643 batch 10 - 1 primary water sample

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S), Water(W), Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432643-1	0207_MW151_241011		11/10/24	2	W				X									☐	☐	
	0207_QCS10-241011		11/10/24	2	W				X									☐	☐	Trip Blank
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY)
Chilling Method: Ice: Frozen / Melted — Ice Bricks: Frozen / Thawed — None
Sample Temp at Receipt: °C °C °C
Security Seal Intact *(circle)*: Yes / No / NA(None)
Carrier Details: ☐ Courier/Post ☐ Client
Con Note #
Packaging: *(Circle)* Hard Esky Foam Esky Box/Bag/Other
Count # # #

Relinquished by: [redacted] Date/Time: 11/10/24
Received by: [redacted] Signature 11/10/24 Date/Time: 1447

Relinquished by: Signature: Date/Time:
Received by: Signature Date/Time:

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432644**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024 14:47
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024 12:27
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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.
- EP231X PFAS: Samples '0207_MW269_241009' (EB2432644-001) and '0207_QC508_241011' (EB2432644-002) showed matrix interference incicated by internal standard recovery greater than 150%. This is deemed acceptable as all associated analytes are less than the limit of reporting.
- EP231X PFAS: The LOR values for particular analytes have been raised in sample '0207_MW269_241009' (EB2432644-001) due to matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at 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	0207_MW269_241009	0207_QC508_241011 Trip Bank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432644-001	EB2432644-002	-------	-------	-------
					Result	Result	---	---	---
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.03**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.04**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW269_241009	0207_QC508_241011 Trip Bank	----	----	----
				Sampling date / time	09-Oct-2024 00:00	11-Oct-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2432644-001	EB2432644-002	-------	-------	-------
					Result	Result	---	---	---
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.27**	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.34**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.34**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.2**	**97.9**	----	----	----
13C8-PFOA	----	0.02	%		**99.3**	**98.0**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432644**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Site	: Swartz Barracks LC	Issue Date	: 21-Oct-2024
Sampler	: [redacted]	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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	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) 0207_MW269_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC508_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW269_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC508_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW269_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC508_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW269_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC508_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW269_241009	**09-Oct-2024**	**15-Oct-2024**	07-Apr-2025	✓	**16-Oct-2024**	07-Apr-2025	✓
HDPE (no PTFE) (EP231X) 0207_QC508_241011 - Trip Bank	**11-Oct-2024**	**15-Oct-2024**	09-Apr-2025	✓	**16-Oct-2024**	09-Apr-2025	✓

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 5.4, 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.

QUALITY CONTROL REPORT

Work Order	: **EB2432644**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013 Swartz Barracks LC	Date Samples Received	: 11-Oct-2024
Order number	: ----	Date Analysis Commenced	: 14-Oct-2024
C-O-C number	: ----	Issue Date	: 21-Oct-2024
Sampler	: [redacted]		
Site	: Swartz Barracks LC		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This 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]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

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: **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: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.05)*	µg/L	6.42	6.90	7.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.05)*	µg/L	9.10	9.75	6.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02 (0.05)*	µg/L	0.83	0.77	7.5	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02 (0.05)*	µg/L	0.90	0.87	4.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02 (0.05)*	µg/L	0.34	0.44	25.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6119448)									
EB2432605-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.05)*	µg/L	0.46	0.45	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02 (0.05)*	µg/L	0.28	0.28	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02 (0.05)*	µg/L	1.32	1.33	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02 (0.05)*	µg/L	0.22	0.22	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1 (0.2)*	µg/L	0.3	<0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6119448)									

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: 6119448) - continued									
EB2432605-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02 (0.05)*	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05 (0.12)*	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6119448)									
EB2432605-005	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

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: 6119448)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.4	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.7	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	88.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	89.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	100	46.1	144
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	95.6	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	93.0	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	90.2	62.6	138
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	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)								

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: 6119448) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	127	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	123	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	90.4	64.2	133

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: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	102	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	94.7	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	92.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.0	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	107	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	77.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	91.5	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	91.1	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.9	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	96.3	71.0	132
		EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.25 µg/L	95.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	99.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	87.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6119448) - continued							
EB2432640-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	88.8	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6119448)							
EB2432640-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	96.4	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	111	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	90.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	78.7	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432644**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: Level 9 145 ANN STREET BRISBANE 4000	Address	
E-mail	: [redacted]	E-mail	
Telephone	: [redacted]	Telephone	
Facsimile	: ----	Facsimile	
Project	: 12638013 Swartz Barracks LC	Page	: 1 of 3
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Swartz Barracks LC		
Sampler	: [redacted]		

Dates

Date Samples Received	: 11-Oct-2024 14:47	Issue Date	: 12-Oct-2024
Client Requested Due Date	: 21-Oct-2024	Scheduled Reporting Date	: **21-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 4.7, 4.8, 6.3°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

Sample Container(s)/Preservation Non-Compliances

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

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

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

EB2432644-002 : [11-Oct-2024] : 0207_QC508_241011 - Trip Bank

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 (31 analytes)
EB2432644-001	09-Oct-2024 00:00	0207_MW269_241009	✓
EB2432644-002	11-Oct-2024 00:00	0207_QC508_241011 T...	✓

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

Accounts Payable Australia

- A4 - AU Tax Invoice (INV) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- Electronic SRN for ESdat (ESRN_ESDAT) 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
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) Email
- Electronic SRN for ESdat (ESRN_ESDAT) Email

[redacted]

CHAIN OF CUSTODY

Mandatory Fields

Page 1 of 1

CoC #: (if applicable)

CLIENT CODE:	GHDSER	*PROJECT MANAGER: [redacted]	SAMPLER: [redacted]
*CLIENT:	GHD PTY LTD	*PM MOBILE: [redacted]	SAMPLER MOBILE: [redacted]
OFFICE: (Invoiced Office)		ALS QUOTE # (Client PL if blank) EB24GHDSER0019 V4	PURCHASE ORDER NO.: [redacted]
PROJECT NO./PROJECT:	12638013 Swartz Barracks LC		SITE: Swartz Barracks
*INVOICE TO: (client default if nil)			☑ CC Invoice to PM
*EMAIL REPORTS TO: (default to PM if blank)	[redacted]		

BIOSECURITY

Country of Origin: (if not Australia)

Environmental Division Brisbane

Work Order Reference

EB2432644

Telephone : +61-7-3552-8666

*** STORAGE REQUIREMENTS** (Please check box →)

- ☑ Standard Storage
- ☐ Extended Storage

Standard Storage time from receipt of samples: Waters - 3 weeks; Soils - 2 months

Specify Disposal Date:

Note: Extended storage incurs a fee and requires a signed agreement.

*** TURNAROUND** (Please check box →) (Not all tests can be expedited, contact Client Services for more information)

- ☑ 5+ days (no surcharge)
- ☐ 3 day (+15%)
- ☐ 2 day (+30%)
- ☐ 1 day (+50%)

***ANALYSIS REQUIRED**

(NB. ALS Quote No. and/or Analysis Suite Codes must be listed to attract suite/quoted price)

Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)

Mark an X in the boxes below analysis to indicate the parameter listed above to be tested on that sample.

Comments: EB2432644 batch 11 - 1 primary water sample

ALS Use Only Lab ID	Sample ID	Depth	Date/Time	No. Bottles	MATRIX: Soil/Solid(S) Water(W) Sediments (SD), Dust (D), Product (P), Biota (B), Biosolid (BS)	Table 1: Groundwater Well Installation	Table 2: Groundwater Monitoring Event 1	Table 3: Groundwater Monitoring Event 2	Table 4: OMP - Oct 2024 (Targeted)	Table 8: OMP - Oct 2026 (Targeted)	Table 6: OMP - Oct 2025 (Targeted)	Table 9: OMP - April 2027 (Comprehensive)	Table 10: Ad Hoc Sampling Year 1	Table 5: OMP - April 2024 (Comprehensive)	Table 7: OMP April 2026 (Comprehensive)			Lab QC (additional bottles req.) Dup	Lab QC (additional bottles req.) MS	Additional Information (Comment on hazards - e.g., asbestos, known high contamination)
EB2432644-1	0207_MW269_241009		9/10/24	2	W				X									☐	☐	
2	0207_QC505-241011		11/10/24	2	W				X									☐	☐	Trip Blank
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	
																		☐	☐	

Receipt Detail (Lab Use ONLY)

Chilling Method: Ice: Frozen / Melted; Ice Bricks: Frozen / Thawed; None

Sample Temp at Receipt: °C °C °C

Security Seal Intact (circle): Yes / No / NA(None)

Carrier Details: ☐ Courier/Post ☐ Client

Con Note #

Packaging: (Circle) Hard Esky; Foam Esky; Box/Bag/Other

Count # # #

Relinquished by: [redacted]	Date/Time: 11/10/24	Received by: [redacted]	Signature 11/10/24 Date/Time: 1447
Relinquished by: Signature:	Date/Time:	Received by: Signature	Date/Time:

CERTIFICATE OF ANALYSIS

Work Order	: **EB2432975**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	: [redacted]
Address		Address	: [redacted]
Telephone		Telephone	[redacted]
Project	: 12638013	Date Samples Received	: 25-Sep-2024 12:44
Order number	: ----	Date Analysis Commenced	: 28-Sep-2024
C-O-C number	: ----	Issue Date	: 03-Oct-2024 17:31
Sampler	: [redacted]		
Site	:		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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: ALS requires 20ml of sample to analyse water samples for EP231X. Where larger volume bottles have been submitted analysis has been re-logged for direct injection (EP231X-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC401_240920	----	----	----	----
				Sampling date / time	20-Sep-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2432975-001	----------	----------	----------	----------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
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	0.10	µg/L		<0.10	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
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	0207_QC401_240920	----	----	----	----
				Sampling date / time	20-Sep-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2432975-001	----------	----------	----------	----------
					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	%		99.3	----	----	----	----
13C8-PFOA	----	0.02	%		101	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

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

QUALITY CONTROL REPORT

Work Order	: **EB2432975**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 668 BRISBANE QLD, AUSTRALIA 4001	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 12638013	Date Samples Received	: 25-Sep-2024
Order number	: ----	Date Analysis Commenced	: 28-Sep-2024
C-O-C number	: ----	Issue Date	: 03-Oct-2024
Sampler	: [redacted]		
Site	:		
Quote number	: EB24GHDSER0019 V4		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

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: 6079330)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	114	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	119	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.475 µg/L	101	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	124	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	117	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	110	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6079330)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	119	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	121	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	120	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	118	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	127	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	129	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	120	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	123	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	133	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	116	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6079330)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	116	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	134	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	112	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	121	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	116	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	128	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	122	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6079330)								

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: 6079330) - continued								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	133	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	134	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	126	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	115	62.2	139
EP231P: PFAS Sums (QCLot: 6079330)								
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2432975**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 12638013	Date Samples Received	: 25-Sep-2024
Site	:	Issue Date	: 03-Oct-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, 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-INJ	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	0	1	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-INJ)							
0207_QC401_240920	**20-Sep-2024**	**28-Sep-2024**	19-Mar-2025	✓	**28-Sep-2024**	19-Mar-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0207_QC401_240920	**20-Sep-2024**	**28-Sep-2024**	19-Mar-2025	✓	**28-Sep-2024**	19-Mar-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X-INJ)							
0207_QC401_240920	**20-Sep-2024**	**28-Sep-2024**	19-Mar-2025	✓	**28-Sep-2024**	19-Mar-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0207_QC401_240920	**20-Sep-2024**	**28-Sep-2024**	19-Mar-2025	✓	**28-Sep-2024**	19-Mar-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X-INJ)							
0207_QC401_240920	**20-Sep-2024**	**28-Sep-2024**	19-Mar-2025	✓	**28-Sep-2024**	19-Mar-2025	✓

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-INJ	0	1	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	0	1	**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-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2432975**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: GPO BOX 668 BRISBANE QLD, AUSTRALIA 4001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	[redacted]
Telephone	: [redacted]	Telephone	
Facsimile	: ----	Facsimile	
Project	: 12638013	Page	: 1 of 2
Order number	: ----	Quote number	: EB2024GHDSER0019 (EB24GHDSER0019 V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	:		
Sampler	: [redacted]		

Dates

Date Samples Received	: 25-Sep-2024 12:44	Issue Date	: 27-Sep-2024
Client Requested Due Date	: 02-Oct-2024	Scheduled Reporting Date	: **02-Oct-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 13.3; 12.2; 12.9°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **27/09/2024: SRN has been resent to acknowledge updated Sample ID as per email from [redacted] Changed from 0207_QC300_240920 to 0207_QC401_240920. For any further information regarding these adjustments please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Unless otherwise stated, analytical work for this work order will be conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**
- EP231X: ALS requires 20ml of sample to analyse water samples for EP231X. Where larger volume bottles have been submitted analysis has been re-logged for direct injection (EP231X-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.

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-INJ PFAS - Full Suite (31 analytes)
EB2432975-001	20-Sep-2024 00:00	0207_QC401_240920	✓

Proactive Holding Time Report

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

Requested Deliverables

Accounts Payable Australia

- A4 - AU Tax Invoice (INV) Email
[redacted]
- A4 - AU Tax Invoice (INV) 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
- Electronic SRN for ESdat (ESRN_ESDAT) Email

[redacted]

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 31 Burma Road Pooraka SA 5095
Ph: 08 8359 0890 E: adelaide@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164
Ph: 02 8784

BRISBANE 2 Byth Street Stafford QLD 4053
Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

TOWN
Ph: 07 47

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

NEWCASTLE 5/19 Maitland Road Mayfield West NSW 2304
Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

MELBOURNE 3-4 Westall Road Springvale VIC 3171
Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

ORANGE 4/13 Geary Place North Orange NSW 2800
Ph: 02 6393 2063 E: orange@alsglobal.com

TOWNSVILLE 14-15 Desma Court Garbutt QLD 4814
Ph: 07 4796 0600 E: townsville@alsglobal.com

MUDGEE 138 Sydney Road Mudgee NSW 2850
Ph: 02 6372 6735 E: mudgee@alsglobal.com

PERTH 10 Hod Way Malaga WA 6090
Ph: 08 9209 7655 E: samples.perth@alsglobal.com

WOLLO
Ph: 02 42

Environmental Division
Brisbane
Work Order Reference
EB2432975

Telephone : +61-7-3552-8686

CLIENT: GHD	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☑ Standard TAT (List due date):	FOR LABORAT
OFFICE: Brisbane		☐ Non Standard or urgent TAT (List due date):	Custody Seal Inta
PROJECT: [redacted] 12638013 PROJECT NO.:	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	Free ice / frozen i receipt?
ORDER NUMBER: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:		Random Sample
PROJECT MANAGER: [redacted] CONTACT PH: [redacted]			Other comment:
SAMPLER: [redacted] SAMPLER MOB [redacted]	RELINQUISHED BY: LA	RECEIVED BY: [redacted] 25/9	RELINQUISHED BY:
COC Emailed to ALS? (YES / NO) EDD FORMAT (or default):	DATE/TIME: 25/9/24 12pm	DATE/TIME: 1200	DATE/TIME:
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]			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	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 BOTTLES	Standard + APAS 30 suite EP231X								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	0207_QC300_240920	20/9/24	W	Ice	2	X								
				TOTAL	2									

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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

Appendix E

Calibration certifications

Oil / Water Interface Meter – Calibration

Project Name/No.:	Defence Oakey	**Field Staff:**	[redacted]
Instrument:	Oil / Water Interface Meter	**Model:**	Heron Instruments
Serial Number:	16277	**Length:**	100m

Item	Test	Pass	Comments
Battery	Compartment	☑	
	Capacity	☑	
Probe	Cleaned/Decon.	☑	
	Operation	☑	
Connectors	Condition	☑	
Tape Check	Cleaned	☑	
	Checked for cuts	☑	
Instrument Test	At surface level	☑	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Tested by:	[redacted]
Test date:	30 Sep 2024
Next Test Due (6 months from last check):	30 Mar 2025

Day Field Sheet

PROJECT NO.	12638013	**DATE:**	1/10/24
PROJECT NAME:	Swartz Barracks LC	**TIME:**	7:45
CLIENT:	Defence	**SAMPLING OFFICERS:**	[redacted]
SITE:	1/10/24	8/10/24	9/10/24
WEATHER	Fine	Fine	overcast
TEMP	18°	29°	20°
GENERAL OBSERVATIONS			

CALIBRATION RECORD

Water Meter

	1/10/24 Before	1/10/24 After	8/10/24 Before	8/10/24 After	9/10/24 Before	9/10/24 After
Time			Redox 218.8		Redox/240	EC/2496
Calibration Standards Used	EC 2391	pH 7.03, 400	EC 3024	pH 4.00, 7.00	pH/4.00	pH/7.02
pH ~~reading after calibration~~ 4	3.96	4.00	3.72	4.01	4.20	3.98
pH ~~reading after calibration~~ 7	7.06	7.03	7.19	7.00	6.98	7.03
EC reading after calibration	5595	2395	2330	3022	2996	2487
DO reading after calibration	96%		97%		96%	
~~Comments~~ Redox			208.2	217.7	243.7	240.0

SITES SAMPLED

FIELD SUPERVISOR **CHECKED** (SIGN & DATE)

Day Field Sheet

PROJECT NO.	12638013	**DATE:**	10/10/24 , 11/10/24
PROJECT NAME:	Swartz Barracks LC	**TIME:**	2:05pm
CLIENT:	Defence	**SAMPLING OFFICERS:**	[redacted]
SITE:	Swartz Barracks		
WEATHER	10/10/24 Fine / 11/10/24 Fine		
TEMP	20° / 19°		
GENERAL OBSERVATIONS			

CALIBRATION RECORD

Water Meter	10/10/24 Before	10/10/24 After	11/10/24 Before	11/10/24 After	
Time	~~Redox~~ 240	EC/2496	~~Redox~~ 240	EC/2496	
Calibration Standards Used	pH/4.00	pH/7.02	pH/4.00	pH/7.02	
pH/~~EC/DO~~ 4	4.00	4.00	3.97	4.00	
7 pH reading after calibration	7.02	7.02	6.97	7.03	
EC reading after calibration	2497	2487	2506	2497	
DO reading after calibration	88%		29%		
~~Comments~~ Redox	250.7	239.8	230.0	239.9	

SITES SAMPLED

FIELD SUPERVISOR _____ **CHECKED** (SIGN & DATE) _____

airmet
Work with Confidence

Calibration Certificate

AirMet Scientific P/L
7/10 Hudson Road
Albion
QLD 4010, Australia
Tel: 07 3220 8600
Fax: 07 3220 8686

This document certifies that the instrument detailed has been calibrated to the parameters

Certificate Print Date: 12-Sep-2024
Calibration Date: 05-Sep-2024
Next Calibration Due: 5-Sep-2025

Call ID / Order No: 272200
Job No / Pack No: S2722000001

Customer: GHD Pty Ltd-ID 402245
Description: YSI ProPlus Galvanic DO PH ORP Quatro 4 Meter
Serial No: 17D106114

Calibration Summary

Frequency: Yearly
Temp: 22°C
Humidity: 45%
As Found: Out of Tolerance
Certificate: S2722000001
Result: Fail

Desc	As Found		As Left (Cal Status)	
	Actual	Result	Actual	Result
PH4	4.18	Pass	4.0	Pass
PH7	7.5	Fail	7.0	Pass
Specific Conductivity	1334.0	Fail	2760.0	Pass
DO	6.0	Fail	0.0	Pass
DO 100%	109.0	Fail	100.0	Pass
ORP	219.3	Fail	233.6	Pass

Standard Used

Equip ID	Description	Valid Until	Cert
BRCOND	Conductivity (2760 us/cm @ 25 deg)		
BRORP	ORP Solution (229 @ 25 deg)		
BRPH7	PH7 (pH = 7.00 +/- 0.02 @ 25 deg)		
BRPH4	PH4 (pH = 4.00 +/- 0.02 @ 25 deg)		
BRDO	DO Powder (Sodium Suplphite Solution)		

Completed By: [redacted]

Signed: [redacted]

eDoc V1R0

Air-Met Scientific

Service Report

airmet
Work with Confidence
ABN: 73 006 849 949

INVOICE ADDRESS	DELIVERY ADDRESS
GHD Pty Ltd GPO Box 668 Brisbane QLD 4001	GHD Pty Ltd (Brisbane) Level 8 145 Ann Street Brisbane QLD 4000 Australia Attention: Email: [redacted]

Customer Code	Call Reference	Customer Order No	Work Order	Print Date: 12/09/2024
402245	272200	11920207 - AD-0.1.01.16		Service Date:

Serial Number 17D106114
YSI ProPlus Galvanic DO PH ORP Quatro 4 Meter
Visual inspection all ok. Unit cleaned. New batteries installed
DO cap and solution replaced.
pH sensor found to be reading over 500mV in ph7 solution. New pH sensor needed.
ORP sensor stated to be faulty and is from 2017. new ORP sensor used.
All parameters pass testing,
Quote to replace pH and ORP sensors, calibrate and test

Job Material Component		Unit	Time / Quantity	Rate	GST	AUD Total Value
301	301 Labour (charged)	Hour	0.25			
CALWAT4	Standard calibration of a four parameter water quality meter	EA	1.00			
605102	ORP (Oxidation Reduction Potential) Sensor	EA	1.00			
605323	YSI 1001A Amplified pH Sensor	EA	1.00			

Miscellaneous Charge

Misc Code	Description
130	SRV FREIGHT - BRIS

ghd.com

The Power of Commitment

Prepared for
Department of Defence
ABN: 68706814312

AECOM

Sampling Event Factual Report, April 2024

PFAS OMP - Swartz Barracks

17-Jul-2024
Doc No. 60612563_RP_095_3_240717

aecom.com

Delivering a better world

Sampling Event Factual Report, April 2024

PFAS OMP - Swartz Barracks

Client: Department of Defence

ABN: 68706814312

17-Jul-2024

Job No.: 60612563

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

Quality Information

Document	Sampling Event Factual Report, April 2024
Ref	60612563
Date	17-Jul-2024
Originator	[redacted]
Checker/s	
Verifier/s	

Revision History

Rev	Revision Date	Details	Approved	
			Name/Position	Signature
0	27-May-2024	Draft	[redacted]	
1	18-Jun-2024	Draft		
3	17-Jul-2024	Final		[redacted]

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Abbreviations

Abbreviation	
AACO	Army Aviation Centre Oakey
AECOM	AECOM Australia Pty Ltd
AFFF	Aqueous film forming foam
ALS	Australian Laboratory Services
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
BOM	Bureau of Meteorology
COC	Chain of Custody
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting
mAHD	metres Australian height datum
mbtoc	Metres below top of casing
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing management plan
ORP	Oxidation reduction potential
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS management area plan
QA/QC	Quality assurance / quality control
QLD	Queensland
RPD	Relative percent difference
SAQP	Sampling analysis and quality plan
SWL	Standing water level

PFAS Group	Compound	CAS No.
Perfluoroalkyl Sulfonic Acids	Perfluorobutane sulfonate (PFBS)	375-73-5
	Perfluoropentane sulfonate (PFPeS)	2706-91-4
	Perfluorohexane sulfonate (PFHxS)	355-46-4
	Perfluoroheptane sulfonate (PFHpS)	375-92-8
	Perfluorooctane sulfonate (PFOS)	1763-23-1
	Perfluorodecane sulfonate (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

Units of Measurement			
L	Litres	m	Metres
mg	Milligram	ha	Hectares
kg	Kilogram	µg	Microgram
mV	Millivolts		

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) (Defence, 2019) at the Swartz Barracks (the 'Site') (formerly known as Army Aviation Centre Oakey, AACO) and the Swartz Barracks Management Area in the South Queensland Region. The OMP for Swartz Barracks also includes groundwater sampling at the Brymaroo Satellite Site (Brymaroo), located approximately 25 km northwest of Swartz Barracks. The locations of the Site, Brymaroo and the Management Area are shown in **Figure 1** and **Figure 2** in **Appendix A**. The OMP for Swartz Barracks (Defence 2019) includes the following sampling events:

- Targeted groundwater sampling events in October 2019, October 2020 and October 2021.
- Annual comprehensive sampling events in March/April 2020, March/April 2021 and March/April 2022 including groundwater, sediment and surface water sampling.

In July 2022, Defence extended the period for the OMP sampling events by two years with additional targeted groundwater sampling events scheduled for October 2022 and October 2023 and additional annual comprehensive sampling events scheduled for March/April 2023 and March/April 2024.

Following each comprehensive and targeted sampling event, sampling event factual reports will be prepared. Annual interpretive reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the comprehensive sampling event completed in April 2024, specifically highlighting first-time detections and/or new exceedances of human health screening criteria for perfluorohexane sulfonate (PFHxS) and perfluorooctane sulfonate (PFOS) and / or perfluorooctanoic acid (PFOA).

This report has been prepared in accordance with the *Ongoing Monitoring Program Reporting Guidance,* Version 0, February 2024 (Defence, 2024).

1.2 Objectives

The objectives of the OMP program are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at the Site.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works is to implement the scope of works for the comprehensive April 2024 sampling event in accordance with the sampling analysis and quality plan (SAQP) (AECOM, 2024a).

2.0 Scope of Work

The sampling event at Swartz Barracks Management Area and Brymaroo was completed in general accordance with the SAQP (AECOM, 2024a). In summary, the scope of works for this sampling event included:

- Obtaining access to private properties where some groundwater sampling locations are situated.
- Review of the SAQP prior to the monitoring event to ensure compliance with the following:
  - PFAS National Environmental Management Plan (NEMP) (Heads of Environmental Protection Agencies [HEPA], 2020)
  - National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013)
  - Defence Routine Environment Water Quality Monitoring Manual, 2016
  - Defence Contamination Management Manual (DCMM), 2018, amended 2021
  - Department of Health , Health Base Guidance Values for PFAS for use in Site Investigations in Australia, 2019
  - National Health and Medical Research Council (NHMRC), Guidance on PFAS in Recreational Water, 2019
  - AS/NZ 5667:1998 Water quality – Sampling
  - Australian and New Zealand Guidelines for Fresh and Marine Water Quality
  - Relevant State regulatory guidelines.
- Gauging of groundwater level in monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 3**, **Figure 4** and **Figure 5** in **Appendix A** for specific locations).
- As per the SAQP (AECOM, 2024a), collection of groundwater samples at 78 monitoring wells (34 at Swartz Barracks, 13 at Brymaroo and 31 located off-site) and 16 off-site residential bores (refer to **Table 1** below, and **Figure 3**, **Figure 4** and **Figure 5** in **Appendix A**). Seven groundwater monitoring wells were not sampled. Two monitoring wells (MW296 and MW297) could not be sampled as the stakeholder did not provide access permission. Two monitoring wells could not be found (MW279 and MW007 [Brymaroo]), one monitoring well was destroyed (MW242), one monitoring well (MW289) was dry, and one monitoring well was blocked (MW270) refer to **Table 8** in **Section 3.6** for details. A nearby well to MW007 at Brymaroo was identified (MW017) and was monitored in replacement. Monitoring well MW243 was sampled in replacement to MW242.
- Collection of co-located surface water and sediment samples at 22 locations including six on-Site and 16 off-Site locations (refer to **Table 2** and **Table 3** below, and **Figure 6** in **Appendix A**). Three of the locations were dry (SW019, SW021 and SW063) and only the co-located sediment sample was collected at these sampling locations. Refer to **Table 8** in **Section 3.6** for details.
- Collecting intra- and inter-laboratory duplicate samples at a rate of 1 in 10 primary samples and collecting one rinsate sample per fieldwork day when re-usable (i.e. decontaminated) equipment was in use.
- Analysis of all samples for a suite of 28 PFAS analytes at the standard limit of reporting (LOR).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of this Sampling Event Factual Report.

As per Defence instruction, all sampling equipment was removed from the monitoring wells following completion of the sampling in each well.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells / Residential Bores
Source Area Bores	Fire training area in the north of the Site	MW562, MW563
	Former fire station in B3	MW201, MW202, MW203, MW204, MW205
	Aqueous film forming foam (AFFF) Storage Area / D20 appliance testing area	MW221, MW222, MW230, MW232
	AFFF recovery tank in F1 / hot refuel area	MW235, MW236, MW241
	AFFF recovery tank in A2 / hot refuel area	MW172, MW173
	AFFF recovery tank in S1	MW299, MW300
	AFFF Settling tank in C1	MW193, MW198, MW207, MW223, MW229
On-Site boundary bores (Oakey Creek Alluvium)		MW167, MW174, MW178, MW179, MW187, MW189, MW233, MW242**, MW245, MW249, MW252
Off-Site background bores (to east/ southeast of the Site)		MW265, MW279[#]
Off-Site south of the Site and down gradient of drainage channels and Oakey Creek		MW267, MW268, MW270[#], MW278, MW292, MW294, *MW132*
Off-Site up and down gradient of landfill		MW280, MW281, MW282
Off-Site west and southwest of the Site		MW255[#], MW257, MW262, MW266, MW272, MW274, MW276, MW283, MW285, MW296[#], *MW003, MW019, MW021, MW038, MW056, MW113, MW114, MW118, MW122, MW134, MW147, MW149, MW151, MW157*
Off-Site underlying aquifers to south of the Site		MW271, MW275, MW288, MW269, MW273, MW289[#], MW290, MW291, MW293, MW295, MW297[#]
Brymaroo		MW001, MW002, MW003, MW004, MW005, MW006, MW007[#*], MW008, MW009, MW010, MW011, MW012, MW013

***Notes**: Italics indicate residential bores. [#]Wells/bores that could not be sampled during this sampling event, refer to **Section 3.6**. * Well MW007 was replaced with MW017. MW017 is screened at a shallower depth compared to MW007. ** Well MW242 was replaced with MW243.*

Table 2 Surface Water Sampling Locations

Area	Description	Surface Water Sampling Locations
Creek	Oakey Creek upstream of drainage channel 3 outfall	*SW032, SW040*
	Oakey Creek downstream of drainage channel outfalls	*SW010, SW011, SW012, SW013, SW056*
	Oakey Creek downstream of confluence with Westbrook Creek	*SW004, SW059*
	Doctor Creek	*SW043*
	Westbrook Creek	*SW028*
Drainage Channel	Drainage Channel 1 (On-Site)	SW065, SW066
	Drainage Channel 1 (Off-Site)	*SW026*
	Drainage Channel 2 (On-Site)	SW024, SW025
	Drainage Channel 2 (Off-Site)	SW009, SW027
	Drainage Channel 3 (On-Site)	SW019#, SW021#, SW063#
	Drainage Channel 3 (Off-Site)	*SW057*

***Note**: Italics indicate off-site surface water location, # indicates locations not sampled, refer to **Section 3.6**.*

Table 3 Sediment Sampling Locations

Area	Description	Sediment Sampling Locations
Creek	Oakey Creek upstream of drainage channel 3 outfall	*SD032, SD040*
	Oakey Creek downstream of drainage channel outfalls	*SD037, SD036, SD0105, SD102, SD018*
	Oakey Creek downstream of confluence with Westbrook Creek	*SD038, SD045*
	Doctor Creek	*SD007*
	Westbrook Creek	*SD070*
Drainage Channel	Drainage Channel 1 (On-Site)	SD106, SD022
	Drainage Channel 1 (Off-Site)	*SD015*
	Drainage Channel 2 (On-Site)	SD024, SD010
	Drainage Channel 2 (Off-Site)	*SD013, SD011*
	Drainage Channel 3 (On-Site)	SD016, SD025, SD107
	Drainage Channel 3 (Off-Site)	SD017

***Note**: Italics indicate off-site sediment location, refer to **Section 3.6**.*

3.0 Methodology

The methodology used for the April 2024 sampling event was in general accordance with the SAQP (AECOM, 2024a) and is summarised below.

3.1 Groundwater Sampling Methodology

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater gauging	The depth to groundwater was measured in each monitoring well prior to the installation of HydraSleeves™ (which were PFAS-free) and immediately prior to collection of groundwater samples using an interface probe (IP).
Quality parameter field measurements	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality were recorded for all groundwater samples. Equipment calibration certificates are provided in **Appendix F**.
Sampling methodology	Groundwater samples were collected from monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round. Once sampling was completed, all sampling equipment was removed from the well. Samples were collected using bailers (which were PFAS-free) from MW017 [Brymaroo] (grab sample to replace MW007) and MW232 (insufficient water volume). Bore water samples were collected by placing the laboratory sample bottle beneath the tap and the tap slowly opened to collect the “first flush” of water.
QA/QC samples	Field quality assurance / quality control (QA/QC) samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits) and rinsate samples. Refer to **Appendix C** for assessment of QA/QC sample data. Rinsate samples were collected at the rate of one sample per fieldwork day by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment. The only reusable equipment that was decontaminated during the sampling event was the IP.
Sample analysis	All primary samples were submitted for analysis for the PFAS suite using the standard levels of detection. Australian Laboratory Services Environmental (ALS) Melbourne, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms and laboratory certificates are presented in **Appendix D** and **Appendix E** respectively.

3.2 Surface Water Sampling Methodology

Table 5 Surface Water Sampling Methodology

Item	Details
Quality parameter field measurements	Temperature, EC, DO, ORP, pH and observations of water quality were recorded for all surface water samples. Equipment calibration certificates are provided in **Appendix F**.
Sampling methodology	Samples were collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory-supplied container was lowered into the water with the cap immediately applied once the container was full.
QA/QC samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits). Equipment rinsate blanks were not collected as no reusable equipment was used during surface water sampling. Refer to **Appendix C** for assessment of QA/QC sample data.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Melbourne, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. COC forms and laboratory certificates are presented in **Appendix D** and **Appendix E** respectively.

3.3 Sediment Sampling Methodology

Table 6 Sediment Sampling Methodology

Item	Details
Sampling methodology	Samples representative of potentially deposited sediments were collected from within the water body if possible. Sediment samples were collected using a trenching shovel from the base of the drain (where possible). At each location, a new laboratory supplied container was used for each sample.
Logging	Sediment characteristics were recorded for each sample.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits). Equipment rinsate blanks were not collected as no reusable equipment was used during sediment sampling. Refer to **Appendix C** for assessment of QA/QC sample data.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Melbourne, Queensland was used as the primary laboratory. The NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. COC forms and laboratory certificates are presented in **Appendix D** and **Appendix E** respectively.

3.4 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS NEMP, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset includes the following:

- PFAS NEMP (HEPA, 2020).
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia.* April 2017 [updated 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.

The adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 7** below.

Table 7 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFHxS and PFOS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFHxS and PFOS	2 µg/L	The values are from NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	The values are from the PFAS NEMP (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	

There are no human health or ecological guideline values available for sediment in Australia.

3.5 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2024a).

Data validation assessment is provided in **Appendix C**.

An unusual result was detected in MW017 at Brymaroo, which was sampled in replacement to MW007, which could not be found. This well had only been monitored on one occasion in 2011 with PFAS concentrations not detected above the LOR. The well was not sampling during the investigation phase in 2017 as it was dry (AECOM, 2018a) and has a screen between 7 and 15.5 mbgl. Monitoring well MW007 was drilled in 2017 to replace MW017 and is screened deeper, between 18.5 and 25.5 mbgl. A grab sample from MW017 was collected in April 2024 and recorded a first-time detection for sum of

PFHxS and PFOS (0.37 µg/L), PFOS (0.04 µg/L) and PFOA (0.03 µg/L). The maximum concentration detected previously in groundwater from MW007 was 0.02 µg/L sum of PFHxS and PFOS in April 2021. The sum of PFHxS and PFOS concentration in MW017 in 2024 is more than an order of magnitude larger than the maximum concentration in MW007. As a grab sample was collected from MW017, it is possible that sediment may be present in the sample affecting the results. Resampling of MW017 would be required to verify the concentration of PFAS detected.

Other than the above observation regarding MW017, the data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

All data collected during this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) (Defence, 2018, amended 2021) requirements.

3.6 Deviations from the SAQP

Table 8 lists the deviations from the SAQP (AECOM, 2024a) during this sampling event.

Table 8 Deviations from the SAQP during Sampling Event for April 2024

SAQP	April 2024 Sampling Event	Impact on OMP program
Collection of groundwater samples at 81 locations at Swartz Barracks Management Area	• A total of 75 out of the 81 groundwater samples specified in the SAQP were collected. • The groundwater samples from off-Site monitoring wells MW296 and MW297 were unable to be collected as the stakeholders did not provide access permission. • Monitoring well MW289 was dry and a sample could not be collected. • Monitoring well MW279 could not be located and is likely destroyed. • Monitoring well MW270 was blocked with roots and the sampling equipment could not be retrieved. • Monitoring well MW242 has been destroyed and MW243 was sampled in replacement.	• The non-sampling of MW270, MW279, MW289, MW296, MW297 reduces the spatial coverage of the groundwater monitoring network at locations to the southwest and south of the Base. • As monitoring well MW289 was dry, there is no information on groundwater quality in the deeper aquifer at this location. • MW243 monitors a shallower depth interval (3-6 mbgl) compared to MW242 (17-20 mbgl) The perched water in MW243 is not representative of deeper groundwater in the Alluvium aquifer at this location.
Collection of groundwater samples at 13 locations at Brymaroo	• A total of 12 out of the 13 groundwater samples specified in the SAQP were collected. Monitoring well MW007 could not be located. A nearby well (MW017) was sampled in replacement.	• As MW017 has not been sampled since 2011 and a grab sample was collected, groundwater results are considered to have low reliability.
Collection of water quality parameters	• Field quality parameters not collected for MW242 (insufficient water volume to collect parameters).	• The non-collection of sampling measurements in this well is of low significance as a large dataset is available for these wells and nearby wells.
Collection of surface	• A total of 19 out of 22 surface water samples were collected.	• The non-presence of water at these locations indicates that no

SAQP	April 2024 Sampling Event	Impact on OMP program
water from 22 sampling locations.	• Three surface water samples from drainage channel 3 were not collected as this channel was dry. Samples SW019, SW021 and SW063 were not collected.	PFAS migration in surface water was occurring at the time of the sampling event. As multiple surface water locations are dry for drainage channel 3, there is limited understanding on PFAS concentrations in surface water at the point of time of sampling for drainage channel 3.

4.0 Field Observations and Results

The sampling event was completed on between 03 and 12 April 2024 with one sample collected on 3 May 2024. The results are summarised in following sections.

4.1 Groundwater

4.1.1 Groundwater Observations and Quality Parameter Field Measurements

Table 9 Groundwater Observations and Quality Parameter Field Measurements

Feature	Details
Access	All monitoring wells and bores were accessible except for the following: • The groundwater samples from monitoring wells MW296 and MW297 were not collected as the stakeholder did not provide access permission. • MW242 has been destroyed and MW243 was sampled in replacement. • MW270 was blocked with roots and could not be sampled. • MW289 was not sampled as it was dry. • MW279 could not be found and is likely to have been destroyed during road repairs. • MW007 [Brymaroo] could not be found. A nearby well MW017 was sampled in replacement.
Monitoring Well Network	All well covers were noted to be in good condition except for the following: • MW001 [Brymaroo] –repairs required to reset the well head. • MW294 – well cover requires replacing. In addition, new bolts are required for the following wells covers: MW006 [Brymaroo], MW204, MW230, MW265, MW272, MW282, MW300.
Field Observations	A hydrocarbon odour and light non aqueous phase liquid (LNAPL) were noted during gauging of MW193 which is located east of Hangar C2 and close to Tank C59. The hydrocarbon contamination is associated with a known historical leak of petroleum hydrocarbons from Tank C60 in 2009 (AECOM, 2018b) and is consistent with historical observations at this location. An organic odour was noted during sampling of MW189, MW222 and MW265 and sulfuric odours were observed during sampling of MW174, MW257, MW271, MW275, MW278, MW280 and MW283. No visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented **Table T1** in **Appendix B**.
Depth to LNAPL	LNAPL was present in MW193 with a thickness of 0.058 m recorded. Measurable LNAPL was not gauged in any of the other monitoring wells during the sampling event. Groundwater gauging data are presented in **Table T1** in **Appendix B**.

Feature	Details
Depth to Groundwater	Depth to groundwater in the Oakey Creek Alluvium aquifer at Swartz Barracks ranged between 2.95 (MW229) and 17.42 mbtoc (MW178). Groundwater elevations in the Oakey Creek Alluvium aquifer ranged between 386.09 (MW178) and 402.58 mAHD (MW229). Depth to groundwater in the Walloon Coal Measures at Swartz Barracks ranged between 8.18 mbtoc (MW295) and 37.13 mbtoc (MW293). Groundwater elevations in the Walloon Coal Measures aquifer ranged between 364.90 mAHD (MW293) and 394.66 mAHD (MW295). Depth to groundwater in the Main Range Volcanics at Brymaroo ranged between 10.42 (MW013) and 11.96 (MW017) mbtoc. Groundwater elevations ranged between 404.39 (MW008) and 407.33 mAHD (MW002). Groundwater gauging data are presented in **Table T1** in **Appendix B**.
Groundwater Flow Direction	Inferred groundwater contours and groundwater flow directions in the Oakey Creek Alluvium aquifer at Swartz Barracks in April 2024 are shown on **Figure 7** in **Appendix A**. The inferred local groundwater flow direction is generally from east to west across the Site and from southeast to northwest across the town. Inferred groundwater contours and groundwater flow directions in the Main Range Volcanics aquifer at Brymaroo in April 2024 are shown on **Figure 8** in **Appendix A**. The inferred local groundwater flow direction is generally flat with flow from east to west.

Feature	Details
Quality Parameter Field Measurements	Groundwater quality parameters were measured prior to collecting groundwater samples. The readings are presented in **Table T1** in **Appendix B** and are summarised below: Swartz Barracks Management Area- Oakey Creek Alluvium • EC ranged from 218 µS/cm (MW232) to 9075 µS/cm (MW267) indicating fresh to brackish conditions. • pH ranged from 6.37 (MW114) to 9.29 (MW267). pH results indicated near neutral to alkaline conditions. • ORP ranged from -151 mV (MW280) to 417.5 mV (MW276) indicating mildly to strongly reducing conditions. • Temperature ranged from 18.5°C (MW288) to 30.8°C (MW274). • The DO results ranged between 0.00 (MW272) and 5.69 mg/L (MW245) indicating poor to moderately oxygenated conditions. Swartz Barracks Management Area- Walloon Coal Measures • EC ranged from 909 µS/cm (MW295) to 3179 µS/cm (MW273) indicating fresh to brackish conditions. • pH ranged from 7.7 (MW291) to 11.71 (MW293). pH results indicated near neutral to alkaline conditions. • ORP ranged from 36.2 mV (MW291) to 160.6 mV (MW273) indicating moderately to strongly reducing conditions. • Temperature ranged from 19.9°C (MW293) to 23.4°C (MW295). • The DO results ranged between 0.2 (MW295) and 0.5 mg/L (MW273) indicating poorly oxygenated conditions. Brymaroo Satellite Site • EC ranged from 119.7 µS/cm (MW004) to 2468 µS/cm (MW008) indicating fresh to brackish conditions. • pH ranged from 6.6 (MW008) to 11.30 (MW001). pH results generally indicated near neutral to alkaline conditions. • ORP ranged from 51.6 mV (MW010) to 369.9 mV (MW001) indicating mildly to moderately reducing conditions. • Temperature ranged from 20.6°C (MW008) to 23.3°C (MW010). • DO results ranged between 0.27 (MW017) and 2.17 mg/L (MW002) indicating poorly to mildly oxygenated conditions.
Weather Conditions	Observations were recorded at the Bureau of Meteorology (BOM) station 041359 – 'Oakey Aero' and reported on Oakey, Qld - Daily Weather Observations (bom.gov.au). Weather conditions during sampling on 3 and between 8 and 12 April 2024 were dry and sunny. Rain events occurred between 4 and 7 April 2024 with a total of 56 mm.
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.

4.1.2 Groundwater Analytical Results

The PFAS groundwater analytical results from this sampling event are presented in **Table T2** in **Appendix B**. In the Swartz Barracks Management Area, there were no first-time detections or new exceedances of the human health guideline values.

At Brymaroo, there was a first-time detection of sum of PFHxS and PFOS (0.02 µg/L) in the groundwater sample from MW008, which slightly exceeded the limit of reporting. The location of MW008 is shown on **Figure 9** in **Appendix A**. First-time detections of sum of PFHxS and PFOS (0.37 µg/L), PFOS (0.04 µg/L) and PFOA (0.03 µg/L) were also recorded in the sample from MW017 (Brymaroo), with a new exceedance of the HEPA (2020) drinking water guideline for sum of PFHxS and PFOS.

Out of the 89 groundwater samples collected[1], 61 exceeded the NEMP (HEPA, 2020) human health drinking water guideline value for sum of PFHxS and PFOS with 12 samples exceeding the PFOA guideline value. A total of 66 groundwater samples exceeded the limit of reporting for PFOS and therefore exceeded the NEMP (HEPA, 2020) ecological guideline for PFOS for 99% protection of freshwater ecosystems. One groundwater sample exceeded the NEMP (HEPA, 2020) PFOA ecological guideline value.

Other than the new maximum concentrations detected for MW008 and MW017 at Brymaroo, no other new maximum concentrations were recorded for sum of PFHxS and PFOS, PFOS or PFOA.

4.2 Surface Water

4.2.1 Surface Water Observations and Quality Parameter Field Measurements

Table 10 Surface Water Observations and Quality Parameter Field Measurements

Compound	Criteria
Access	All 22 surface water sampling locations were accessible during the sampling event. Three locations, SW019, SW021 and SW063 were dry and no samples could be collected.
Field Observations	Field observations were recorded for the 19 samples collected. Other than an organic odour in the sample from SW059 along Oakey Creek, no visual or olfactory indications of contamination were observed during the sampling of the surface water sampling locations. Field observations are presented in **Table T3** in **Appendix B**. At the sampling locations along Oakey Creek, Westbrook Creek and Doctor Creek, water was flowing slowly downstream to the west. Pooled water was present at all drainage channel sampling locations.
Quality Parameter Field Measurements	Surface water quality parameters were measured prior to collecting surface water samples. The readings are presented in **Table T3** in **Appendix B** and are summarised below: • DO ranged from 0.86 mg/L (SW011) to 5.56 mg/L (SW032) indicating a range between poorly and well oxygenated conditions. • EC ranged from 110.9 µS/cm (SW027) to 1,184 µS/cm (SW009) indicating fresh conditions. • pH ranged from 6.71 (SW066) to 8.02 (SW004). pH results generally indicated near neutral conditions. • ORP ranged from -112.5 mV (SW025) to 293.7 mV (SW024) indicating moderately to strongly reducing conditions. • Temperature ranged from 15.1°C (SW043) and 31.5°C (SW027).

[1] The number of samples shown excludes quality assurance samples (i.e. duplicates and triplicates).

Compound	Criteria
Weather Conditions	Observations were recorded at the Bureau of Meteorology (BOM) station 041359 – 'Oakey Aero' and reported on Oakey, Qld - Daily Weather Observations (bom.gov.au). Weather conditions during sampling on 3 and between 8 and 12 April 2024 were dry and sunny. Rain events occurred between 4 and 7 April 2024 with a total of 56 mm.
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.

4.2.2 Surface Water Analytical Results

The PFAS surface water analytical results from this sampling event are presented in **Table T4** in **Appendix B**. There were no first-time detections of sum of PFHxS and PFOS and PFOA above the limit of reporting or new exceedances of the NEMP (HEPA, 2020) human health or ecological guidelines. There were no exceedances of the NEMP (HEPA, 2020) recreational water guideline value for sum of PFHxS and PFOS or PFOA guideline value. Out of the 19 surface water samples collected, 13 reported PFOS concentrations above the LOR and all these samples exceeded the ecological guideline for protection of freshwater species (99% protection level). There were no exceedances of the ecological guideline for PFOA in the samples.

4.3 Sediment

4.3.1 Sediment Observations and Field Measurements

Table 11 Sediment Observations and Field Measurements

Compound	Criteria
Access	All sediment sampling locations were accessible during the sampling event.
Field Observations	No visible or olfactory indications of contamination were observed during the sampling of the sediment locations. Field observations are presented in **Table T5** in **Appendix B**.
Weather Conditions	Observations were recorded at the Bureau of Meteorology (BOM) station 041359 – 'Oakey Aero' and reported on Oakey, Qld - Daily Weather Observations (bom.gov.au). Weather conditions during sampling on 3 and between 8 and 12 April 2024 were dry and sunny. Rain events occurred between 4 and 7 April 2024 with a total of 56 mm.
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.

4.3.2 Sediment Analytical Results

The PFAS sediment analytical results from this sampling event are presented in **Table T6** in **Appendix B**. There was one sediment sample (SD032) with first-time detections of sum of PFHxS and PFOS (0.0003 mg/kg) and PFOS (0.0003 mg/kg). The concentrations are slightly above the LOR (0.0002 mg/kg). The sediment sample is located along Oakey Creek, upstream of the Base, refer to **Figure 10**, **Appendix A**. Other than sample SD032, new maximum concentrations were recorded in SD037 (PFOS 0.0083 mg/kg) and SD107 for sum of PFHxS and PFOS (0.0456 mg/kg) and PFOS (0.0425 mg/kg).

5.0 Summary and Next Sampling Event

5.1 Summary of Monitoring Event

A comprehensive groundwater, surface water and sediment monitoring event was completed within and outside of the Swartz Barracks Management Area, including at Brymaroo, between 03 April and 12 April 2024. One of the samples from Swartz Barracks Management Area was collected in a follow-up visit on 03 May 2024. The program included sampling of groundwater from 78 monitoring wells, 16 off-Site residential bores, and 22 co-located surface water and sediment sampling locations.

Table 12 summarises the findings of the April 2024 sampling event and the recommended actions.

Table 12 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	87 out of the 94 monitoring well/bore locations were accessible and able to be sampled. Access to MW296 and MW297 was not provided by the property owner. Two monitoring wells (MW279 and MW007 at Brymaroo) could not be sampled as they could not be found. One well, MW242, was destroyed and replaced with MW243. One well, MW289, was dry. One well was blocked (MW270). An alternative well at Brymaroo, MW017, was sampled in replacement to MW007. All 22 surface water and sediment sampling locations were accessible. Surface water samples were not collected from three locations (SW019, SW021 and SW063) as the locations were dry. The non-sampling of groundwater has the potential to impact on the understanding of the distribution of PFAS in groundwater at Swartz Barracks Management Area.	The loss of the wells/bores should be considered in the 2024 Ongoing Monitoring Report. Maintenance work is required at MW270 to unblock the well. The 2023 OMR (AECOM, 2024b) did not recommend replacement of MW279 so this well should be removed from the SAQP. Monitoring well MW242 should be replaced with nearby wells MW403S and MW403D.
Monitoring well network condition	All well covers were noted to be in good condition except for the following: • MW001 [Brymaroo] –repairs required to reset the well head. • MW294 – well cover requires replacing. In addition, new bolts are required for the following wells covers: MW006 [Brymaroo], MW204, MW230, MW265, MW272, MW282, MW300.	Repairs to the well covers should be undertaken prior to the next sampling event.
Analytical Results	PFAS concentrations were consistent with historical results for 87 of the 89 groundwater samples analysed, all 19 surface water samples and 21 of the 22 sediment samples.	Ongoing monitoring in accordance with the OMP.
First-time detections of Sum of PFHxS and PFOS or PFOA	The groundwater sample from MW008 (Brymaroo) recorded a first-time detection of sum of PFHxS and PFOS (0.02 µg/L). A second sample from Brymaroo, MW017 also recorded first-time detections of sum of PFHxS and PFOS (0.37 µg/L), PFOS (0.04 µg/L) and PFOA (0.03 µg/L). MW017 was sampled in replacement for MW007, which could not be found.	Ongoing monitoring in accordance with the OMP. Vegetation clearance to allow access to MW007 at Brymaroo. Re-sampling of MW017 in the next sampling event to verify the detection.

Item	Comment	Recommended Actions
	The sediment sample from SD032 recorded a first-time detection of sum of PFHxS and PFOS (0.0003 mg/kg) and PFOS (0.0003 mg/kg). No first-time detections of PFAS above the laboratory LOR were recorded in any other groundwater sample or any of the 19 surface water samples or 22 sediment samples collected.	
New exceedance of HEPA (2020) drinking water guideline values or recreational water use guidelines	A new exceedance of the groundwater drinking water guideline value was recorded in the sample from MW017 at Brymaroo. No other new exceedances were identified in the dataset.	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

The next sampling event is scheduled for October 2024.

5.3 Upcoming Ongoing Monitoring Report

The next ongoing monitoring report is scheduled for March 2025.

6.0 References

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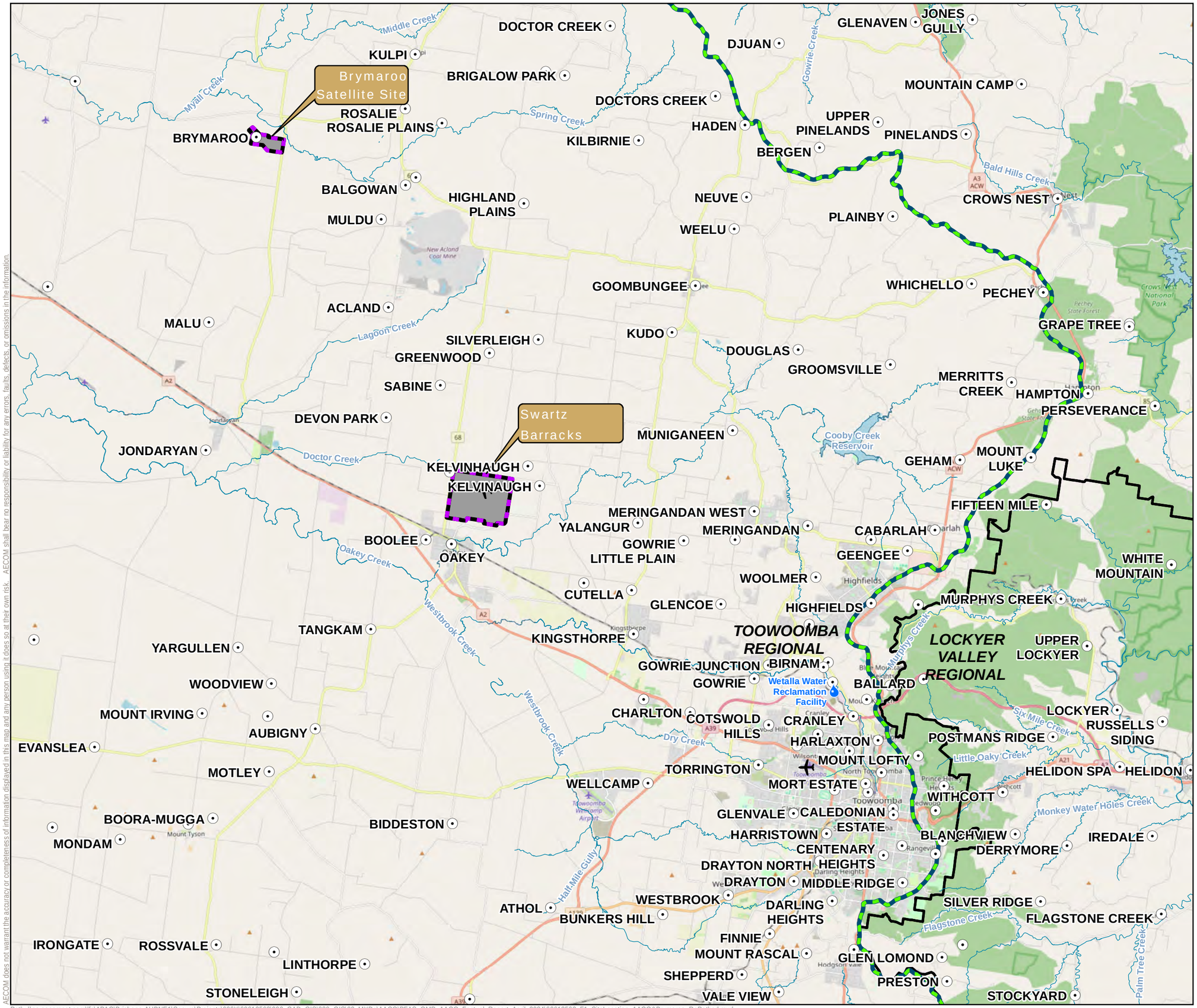
Standards Australia 1998, AS/NZ 5667:1998 Water Quality – Sampling.

Appendix A

Figures

Appendix A Figures

Figure 1 Location of Swartz Barracks and Brymaroo Satellite Site
Figure 2 Management Zones – Activities with Elevated PFAS Exposure
Figure 3 On-Site Groundwater Monitoring Locations
Figure 4 Off-Site Groundwater Monitoring Locations
Figure 5 Brymaroo Groundwater Monitoring Locations
Figure 6 Surface Water and Sediment Sampling Locations
Figure 7 Inferred Groundwater Contours: Oakey Creek Alluvium: April 2024
Figure 8 Inferred Groundwater Contours in the Main Range Volcanics at Brymaroo: April 2024
Figure 9 Groundwater Results: Deviations from Historical Data – Brymaroo
Figure 10 Sediment Results: Deviations from Historical Data – Swartz Barracks



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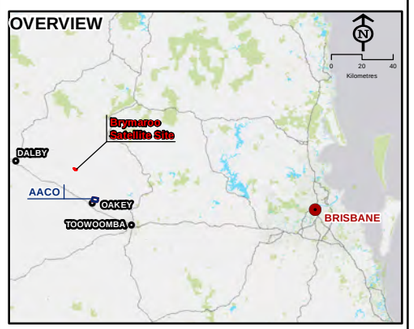
DATUM GDA 1994. PROJECTION MGA ZONE 56

0 2.5 5 Kilometres

1:200,000 (when printed at A3)

LEGEND

- Airport
- Watercourse/waterbody
- Great Dividing Range
- Investigation Area
- Local Governmental Area
- Base Boundaries
- National Park



Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011

PFAS OMP SWARTZ BARRACKS SAMPLING
EVENT FACTUAL REPORT: APRIL 2024

SITE LOCATION

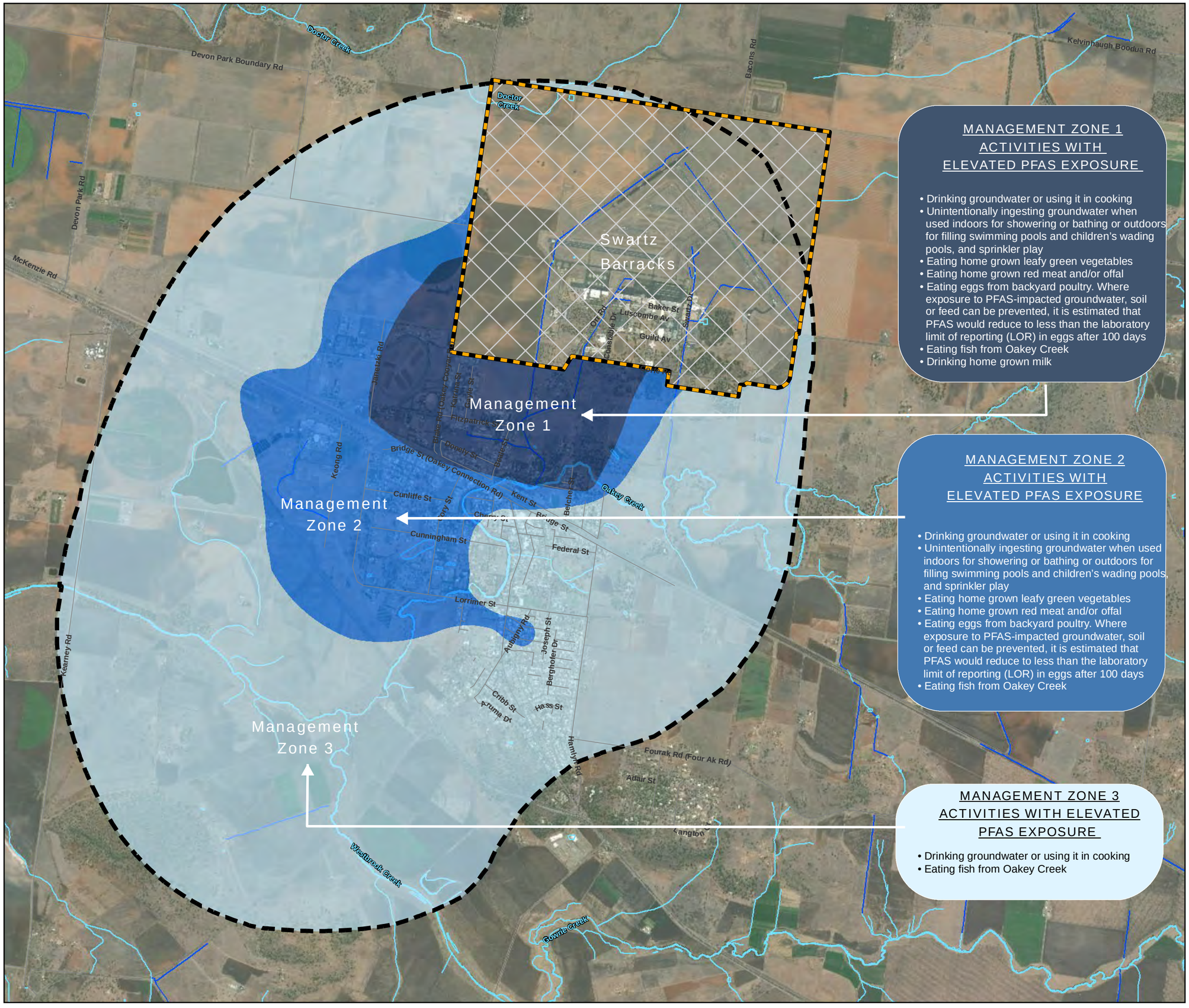
PROJECT ID	60612563
CREATED BY	WW
LAST MODIFIED	[redacted] 24/04/2024
VERSION:	1

FIGURE 1

A3 size

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MANAGEMENT ZONE 1 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek
- Drinking home grown milk

MANAGEMENT ZONE 2 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Unintentionally ingesting groundwater when used indoors for showering or bathing or outdoors for filling swimming pools and children's wading pools, and sprinkler play
- Eating home grown leafy green vegetables
- Eating home grown red meat and/or offal
- Eating eggs from backyard poultry. Where exposure to PFAS-impacted groundwater, soil or feed can be prevented, it is estimated that PFAS would reduce to less than the laboratory limit of reporting (LOR) in eggs after 100 days
- Eating fish from Oakey Creek

MANAGEMENT ZONE 3 ACTIVITIES WITH ELEVATED PFAS EXPOSURE

- Drinking groundwater or using it in cooking
- Eating fish from Oakey Creek

LEGEND

- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Area
- Swartz Barracks

km
0 0.25 0.5 1

SCALE 1:35,000
SIZE A3
SHEET 1 of 1
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 2: Management Zones - Activities with Elevated PFAS Exposure

PROJECT
Sampling Event Factual Report, April 2024
PFAS OMP-Swartz Barracks

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 100 200 400 m

1:9,100 (when printed at A3)

LEGEND

- Site Boundary
- On-Site Groundwater Monitoring Locations
- Groundwater Monitoring Well - not sampled

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
© State of Queensland, 2017

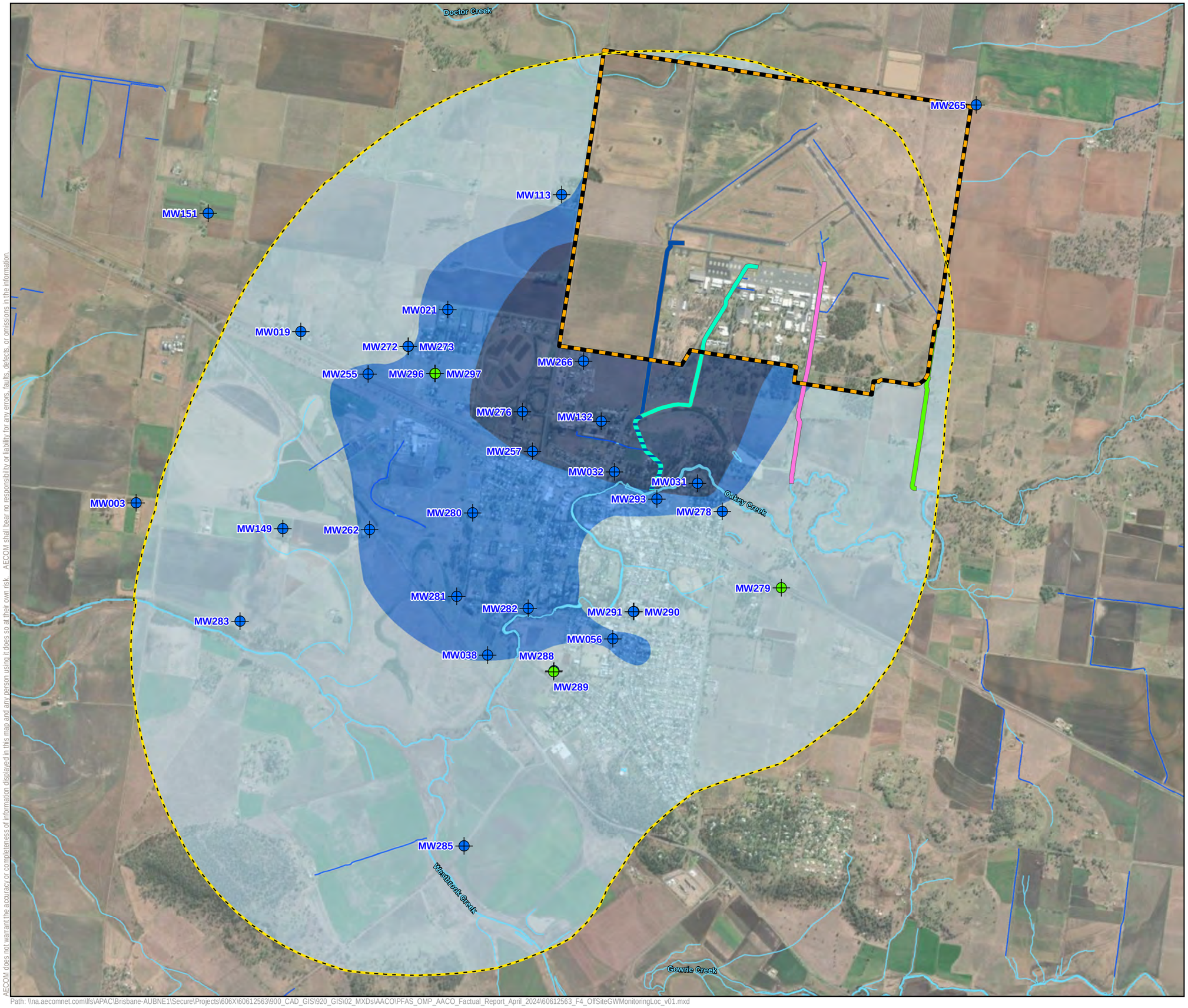
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Sampling Event Factual Report April 2024,
PFAS OMP - Swartz Barracks

ON-SITE GROUNDWATER MONITORING LOCATIONS

PROJECT ID [redacted]
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FIGURE 03



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:32,000 (when printed at A3)

- Groundwater Monitoring Well- sampled
- Groundwater Monitoring Well - not sampled
- Drainage channel
- Watercourse/water body
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Management Area
- Site Boundary

Note: Not all monitoring well / bore locations are shown due to privacy reasons.

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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Sampling Event Factual Report, April 2024,
PFAS OMP - Swartz Barracks

OFF-SITE GROUNDWATER MONITORING LOCATIONS

PROJECT ID 60612563
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VERSION:

FIGURE 04

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DATUM GDA 1994. PROJECTION MGA ZONE 56

Meters
0 10 20 40 60

1:1,800 (when printed at A3)

- Brymaroo Satellite Site
- Monitoring Wells- sampled
- Monitoring Wells- not sampled

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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Sampling Event Factual Report, April 2024
PFAS OMP - Swartz Barracks

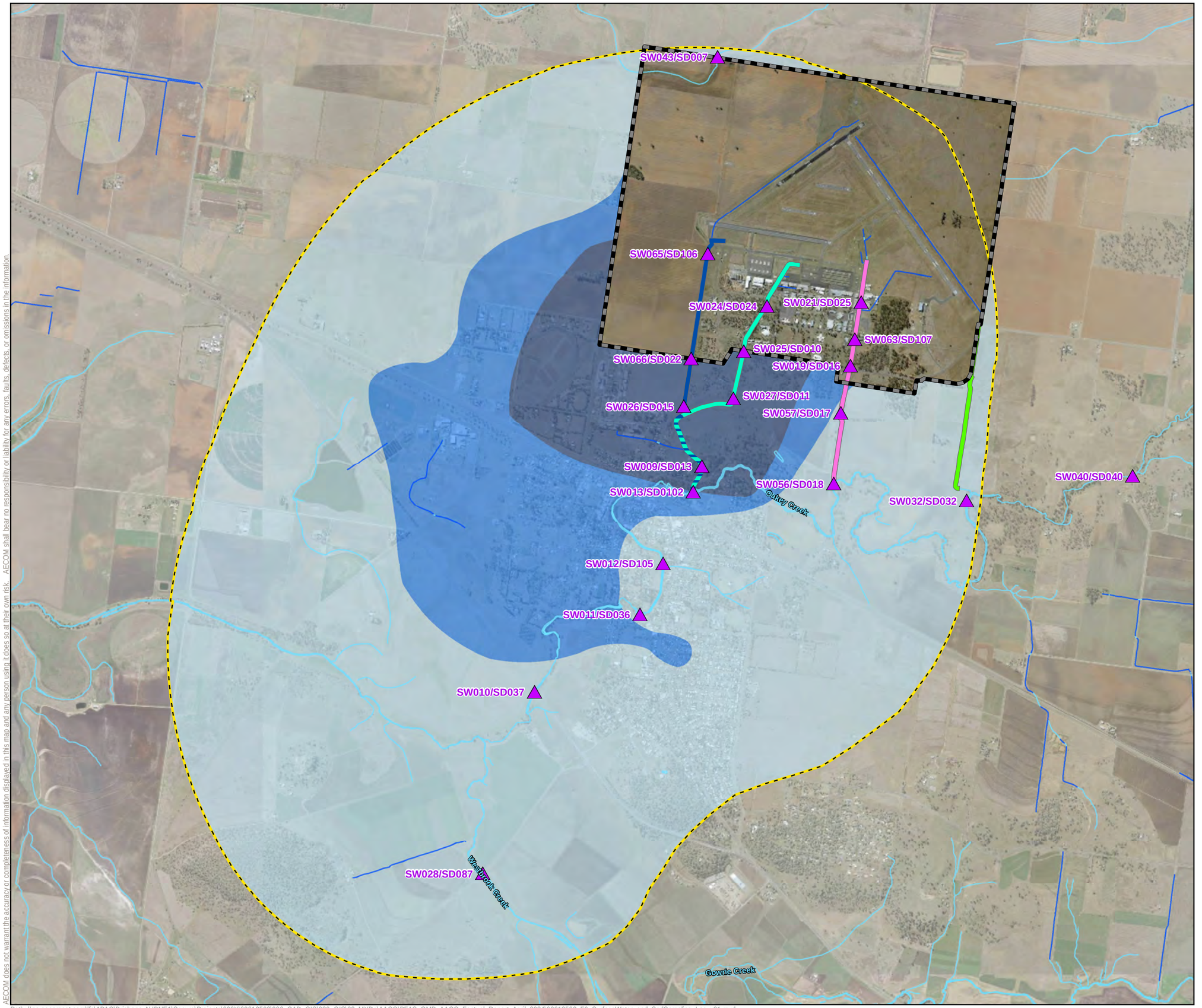
BRYMAROO GROUNDWATER MONITORING LOCATIONS

PROJECT ID	60612563
CREATED BY	
LAST MODIFIED	24/04/2024
VERSION:	1

FIGURE 05

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:32,000 (when printed at A3)

- Surface Water and Sediment Locations- sampled
- Management Area
- Site Boundary
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Drainage channel
- Watercourse/water body

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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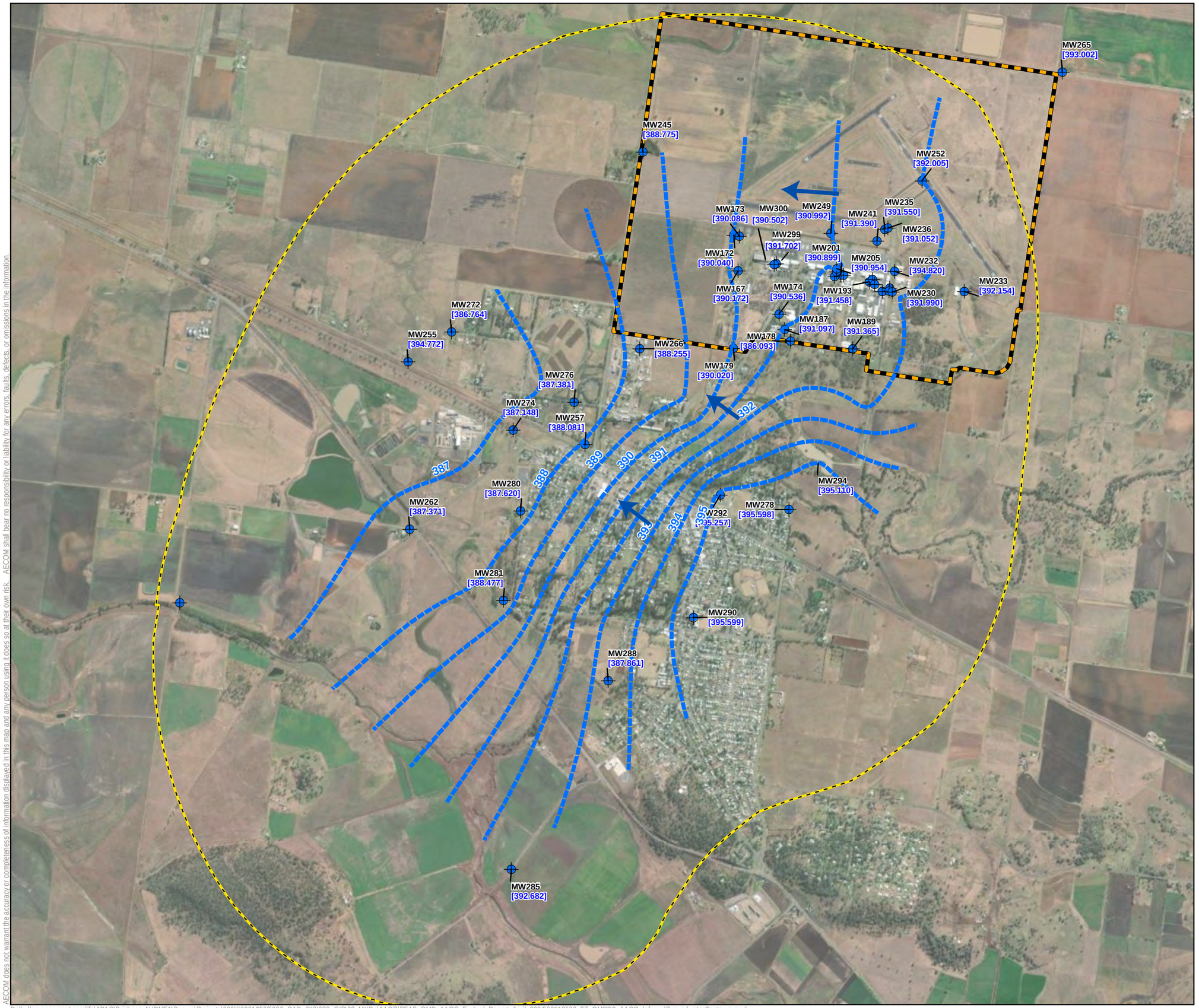
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Sampling Event Factual Report, April 2024
PFAS OMP - Swartz Barracks

SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

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LAST MODIFIED	
VERSION:	1

FIGURE 06



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.5 1 km

LEGEND

- Management Area
- Site Boundary
- Groundwater Monitoring Wells (mAHD)
- Groundwater Elevation Contour (mAHD)
- Groundwater Flow Direction

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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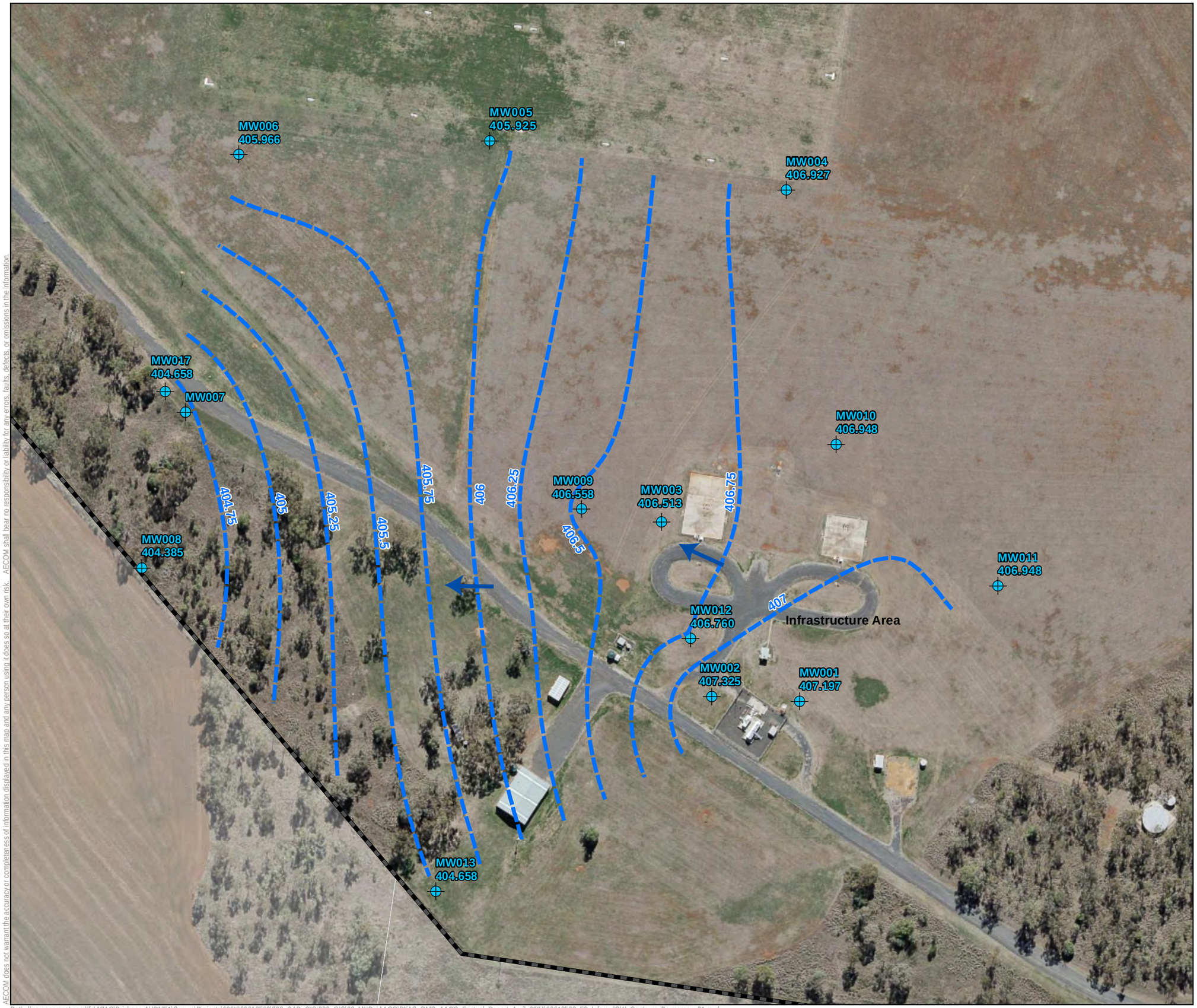
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DEPARTMENT OF DEFENCE

Sampling Event Factual Report, April 2024,
PFAS OMP - Swartz Barracks

INFERRED GROUNDWATER CONTOURS
OAKEY CREEK ALLUVIUM: APRIL 2024

PROJECT ID 60612563
CREATED BY [redacted]
LAST MODIFIED
VERSION:

FIGURE
07



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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 10 20 40 60 Meters

1:1,800 (when printed at A3)

- Brymaroo Satellite Site
- Groundwater Elevation Contour (mAHD)
- Groundwater elevation in monitoring well (mAHD)
- Groundwater Flow Direction

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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Sampling Event Factual Report, April 2024
PFAS OMP - Swartz Barracks

INFERRED GROUNDWATER CONTOURS IN THE MAIN RANGE VOLCANICS AT BRYMAROO: APRIL 2024

PROJECT ID	60612563
CREATED BY	
LAST MODIFIED	27/05/2024
VERSION:	1

FIGURE 08

A3 size

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DATUM GDA 1994. PROJECTION MGA ZONE 56

N
0 10 20 40 60 Meters

1:1,800 (when printed at A3)

- First time detection of PFHxS+PFOS, PFOS or PFOA
- First time exceedance of human healthguide PFHxS+PFOS,PFOS or PFOA
- Brymaroo Satellite Site

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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Sampling Event Factual Report, April 2024
PFAS OMP - Swartz Barracks

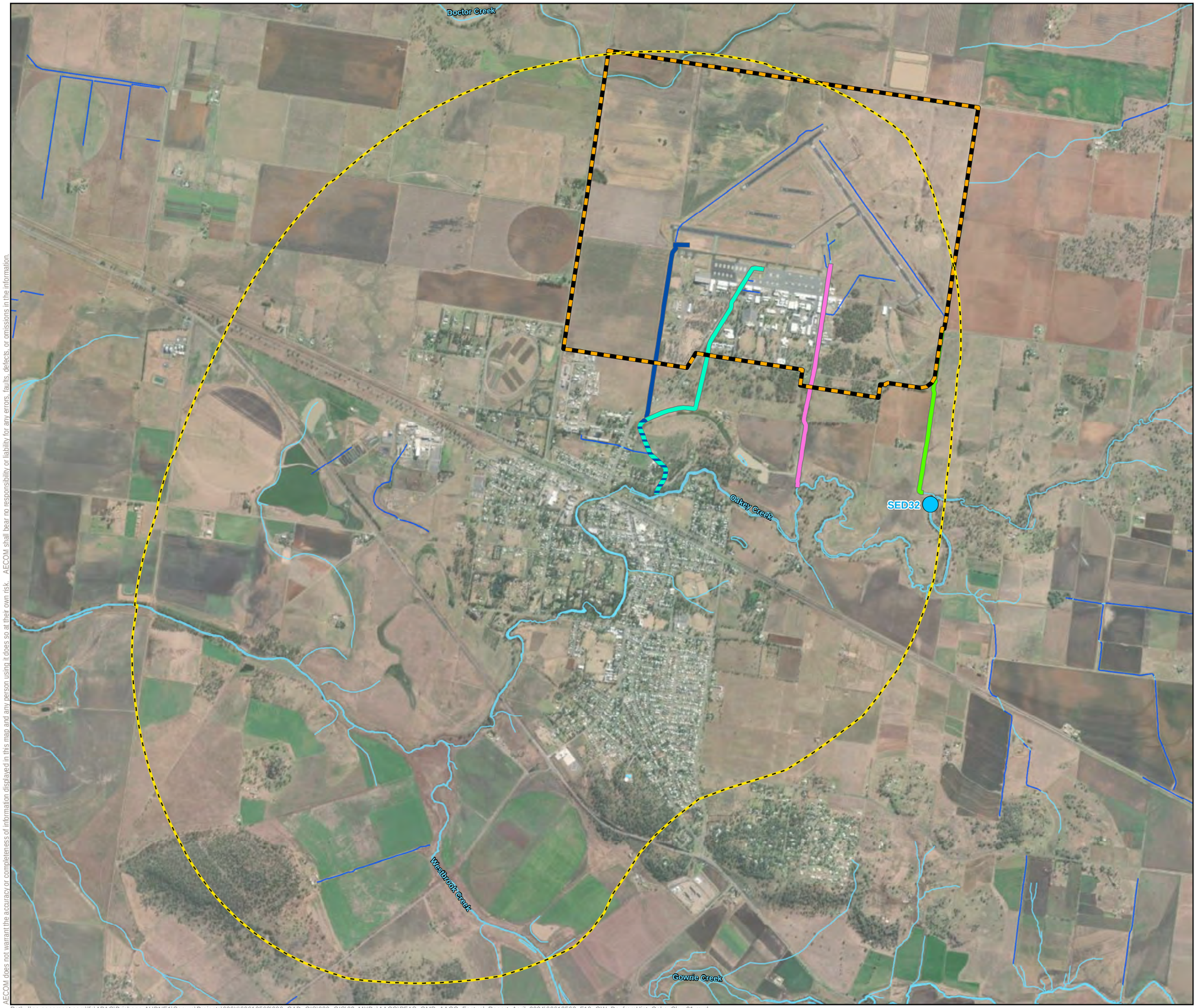
Groundwater Results: Deviations from Historical Data- Brymaroo

PROJECT ID	60612563
CREATED BY	
LAST MODIFIED	22/05/2024
VERSION:	1

FIGURE 09

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DATUM GDA 1994. PROJECTION MGA ZONE 56

0 0.25 0.5 1 km

1:32,000 (when printed at A3)

- First-time detection of PFHxS+PFOS, PFOS or PFOA
- First-time exceedance of PFHxS+PFOS, PFOS or PFOA
- Management Area
- Site Boundary
- Drain # 1
- Drain # 2
- Drain # 2 after confluence with Drain # 1
- Drain # 3
- Drain # 4
- Drainage channel
- Watercourse/water body

Data sources:

Base Layers: ESRI Basemaps Online
Street, Drainage Lines, Locality, Features: @ Street Pro 2011
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Sampling Event Factual Report, April 2024,
PFAS OMP - Swartz Barracks

SEDIMENT RESULTS: DEVIATIONS FROM HISTORICAL DATA- SWARTZ BARRACKS

PROJECT ID 60612563
CREATED BY [redacted]
LAST MODIFIED [redacted]: 27/05/2024
VERSION: 2

FIGURE 10

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Appendix B

Tables

Appendix B Tables

Table T1 Groundwater Gauging and Quality Parameter Field Measurement Results
Table T2 Groundwater PFAS Analytical Results
Table T3 Surface Water Quality Parameter Field Measurement Results
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Table T5 Sediment Observations Results
Table T6 Sediment PFAS Analytical Results

Table T1 Groundwater Gauging and Quality Parameter Field Measurement Results

Property ID	Well ID	Date Hydrasleeve Installed	Date Bore/Well Sampled	Gauging Date	Well Depth (mbtoc)	Depth to LNAPL (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Corrected Groundwater Elevation (mAHD)*	Condition of Gatic	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
1435	MW001	10/04/2023	5/04/2024	5/04/2024	21.22	-	11.337	418.534	407.197	407.197	Damaged	1.12	1154	11.3	164.9	369.9	21.7	Clear	Clear	No odour	No sheen	HydraSleeve™. Well cover repair required.
1435	MW002	11/04/2023	5/04/2024	5/04/2024	20.6	-	10.894	418.219	407.325	407.325	Good	2.17	1931	8.68	-77	128	21.5	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW003	11/04/2023	4/04/2024	4/04/2024	20.37	-	11.541	418.054	406.513	406.513	Good	0.36	1250	6.97	-101.3	103.7	22.9	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW004	11/04/2023	4/04/2024	4/04/2024	24.74	-	10.451	417.378	406.927	406.927	Good	0.77	1021	7.35	-43.6	161.4	23.1	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW005	11/04/2023	4/04/2024	4/04/2024	20.96	-	11.925	417.850	405.925	405.925	Good	1	119.7	7.54	-47.9	157.1	22.9	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW006	11/04/2023	4/04/2024	4/04/2024	27.06	-	10.493	416.459	405.966	405.966	Good	1.24	1292	7.48	-55	150	22.9	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
1435	MW007	11/04/2023	Not found																			Not found
1435	MW008	11/04/2023	5/04/2024	5/04/2024	22.11	-	10.807	415.192	404.385	404.385	Good	0.41	2468	6.6	-122.2	82.8	20.6	Clear	clear	No odour	No sheen	HydraSleeve™
1435	MW009	11/04/2023	4/04/2024	4/04/2024	26.07	-	11.431	417.989	406.558	406.558	Good	0.75	1956	7.04	-50.3	154.7	22.4	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW010	11/04/2023	4/04/2024	4/04/2024	26.78	-	11.076	418.024	406.948	406.948	Good	0.91	1473	7.66	-153.4	51.6	23.3	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW011	11/04/2023	4/04/2024	4/04/2024	27.45	-	11.341	418.289	406.948	406.948	Good	0.37	1210	7.35	-58.3	146.7	22.6	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW012	11/04/2023	5/04/2024	5/04/2024	26.63	-	11.58	418.340	406.760	406.760	Good	0.98	1564	7.46	-61.1	143.9	21.7	Medium	Brown	No odour	No sheen	HydraSleeve™
1435	MW013	19/04/2022	5/04/2024	5/04/2024	23.65		10.424	415.93	405.506	405.506	Good	0.41	1577	7.16	-83	122	20.6	Clear	Clear	No odour	No sheen	HydraSleeve™
1435	MW017	-	5/04/2024	5/04/2024	15.05		11.962	416.62	404.658	404.658	Good	0.27	1738	6.62	-62.2	142.8	21.6	Clear	Clear	No odour	No sheen	Bailer
0207	MW003	None-tap	None-tap	08/04/2024	-	-	Not gauged - pumping equipment installed.				-	1.02	2521	7.3	24.2	229.2	30.5	Clear	Clear	No odour	No sheen	Tap sample
0207	MW019	None-tap	None-tap	09/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.01	2264	7.1	102.8	307.8	24.9	Low	Brown	No odour	No sheen	Tap sample
0207	MW021	None-tap	None-tap	09/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.1	1505	7.11	75.2	280.2	23.1	Clear	Clear	No odour	No sheen	Tap sample
0207	MW038	None-tap	None-tap	08/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.240	564	7.86	22.8	227.8	23.7	Clear	Clear	No odour	No sheen	Tap sample
0207	MW056	25/10/2023	9/04/2024	09/04/2024	12.04	-	9.221	-	-	-	-	1.51	1808	6.85	198.9	403.9	21.3	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW113	None-tap	None-tap	10/04/2024	-	-	Not gauged - pumping equipment installed.				-	1.03	1475	7	51.6	256.6	23.4	Clear	Clear	No odour	No sheen	Tap sample
0207	MW114	None-tap	None-tap	10/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.05	1408	6.37	-59.2	145.8	20.1	Clear	Clear	No odour	No sheen	Tap sample
0207	MW118	None-tap	None-tap	10/04/2024	-	-	Not gauged - pumping equipment installed.				-	4.75	1498	7.26	-39.6	165.4	21.3	Clear	Clear	No odour	No sheen	Tap sample
0207	MW122	None-tap	None-tap	10/04/2024	-	-	Not gauged - pumping equipment installed.				-	4.02	1566	6.99	-20.5	184.5	22.9	Clear	Clear	No odour	No sheen	Tap sample
0207	MW132	None-tap	None-tap	3/05/2024	-	-	Not gauged - pumping equipment installed.				-	2.40	3072	6.91	108.60	313.60	21.9	Clear	Clear	No odour	No sheen	Tap sample
0207	MW134	None-tap	None-tap	10/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.01	1897	7.1	115.4	320.4	19.9	Clear	Clear	No odour	No sheen	Tap sample
0207	MW139	None-tap	None-tap	10/04/2024	-	-	Not gauged - pumping equipment installed.				-	1.18	1500	7.06	47.5	252.5	24	Clear	Clear	No odour	No sheen	Tap sample, Ad hoc sample
0207	MW147	None-tap	None-tap	09/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.2	3489	7.09	69.4	274.4	23.8	Clear	Clear	No odour	No sheen	Tap sample
0207	MW149	None-tap	None-tap	09/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.62	1851		2	207	23.2	Clear	Brown	No odour	No sheen	Tap sample
207	MW151	None-tap	None-tap	09/04/2024	-	-	Not gauged - pumping equipment installed.				-	0.92	1810	7	103.5	308.5	24.4	Clear	Clear	No odour	No sheen	Tap sample
0207	MW157	None-tap	None-tap	10/04/2024	-	-	Not gauged - pumping equipment installed.				-	3.54	1938	7.07	45	250	22.2	Clear	Clear	No odour	No sheen	Tap sample
0207	MW167	24/10/2023	2/04/2024	02/04/2024	15.12	-	12.256	402.428	390.172	390.172	Good	2.4	1984	7.05	112.2	317.2	23.1	Medium	Brown	No odour	No sheen	HydraSleeve™
0207	MW172	24/10/2023	2/04/2024	2/04/2024	17.13		12.778	402.818	390.040	390.040	Good	2.52	1804	7.1	103.8	308.8	23.8	Medium	Brown	No odour	No sheen	HydraSleeve™
0207	MW173	24/10/2023	2/04/2024	2/04/2024	17.81	-	13.176	403.262	390.086	390.086	Good	4.37	1948	6.68	126.3	331.3	23.2	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW174	24/10/2023	3/04/2024	3/04/2024	29.96	-	13.536	404.072	390.536	390.536	Good	1.46	2986	7.04	-16.7	188.3	20.5	Medium	Cloudy	Sulfuric odour	No sheen	HydraSleeve™
0207	MW178	24/10/2023	3/04/2024	3/04/2024	18.426	-	17.42	403.513	386.093	386.093	Good	0.77	3585	6.98	-31.3	173.7	21.6	Medium	Brown	No odour	No sheen	HydraSleeve™
0207	MW179	24/10/2023	3/04/2024	3/04/2024	20.91	-	12.986	403.006	390.020	390.020	Good	0.6	4062	6.88	75.9	280.9	24	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW187	26/10/2023	3/04/2024	3/04/2024	18.34	-	13.479	404.576	391.097	391.097	Good	0.6	3737	6.85	25.7	230.7	21.5	Low	Cloudy	No odour	No sheen	HydraSleeve™
0207	MW189	26/10/2023	3/04/2024	3/04/2024	21.02	-	13.287	404.652	391.365	391.365	Good	0.85	4698	6.73	-36.4	168.6	21.5	Clear	Clear	Organic odour	No sheen	HydraSleeve™
0207	MW193	24/10/2023	2/04/2024	2/04/2024	19.74	14.157	14.215	405.630	391.415	391.458	Good	0.48	4812	6.86	-90.9	114.1	24.3	Low	Clear	Weak hydrocarbon odour	LNAPL present	HydraSleeve™
0207	MW198	24/10/2023	2/04/2024	2/04/2024	13.47	-	7.275	405.505	398.230	398.230	Good	1.72	2980	7.01	96.2	301.2	24.4	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW201	25/10/2023	2/04/2024	2/04/2024	19.8	-	13.901	404.800	390.899	390.899	Good	0.76	5238	6.72	91.8	296.8	23.9	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW202	25/10/2023	2/04/2024	2/04/2024	19.16	-	13.96	405.000	391.040	391.040	Good	0.66	2978	6.89	83.2	288.2	24.2	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW203	24/10/2023	2/04/2024	2/04/2024	20.07	-	13.889	405.100	391.211	391.211	Good	1.69	4026	6.74	94.5	299.5	24.2	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW204	24/10/2023	2/04/2024	2/04/2024	19.97	-	14.203	405.200	390.997	390.997	Good	1.71	6245	6.81	87.4	292.4	23.3	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
0207	MW205	24/10/2023	2/04/2024	2/04/2024	20.07	-	14.746	405.700	390.954	390.954	Good	2.25	4395	6.63	98	303	24.9	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW207	25/10/2023	2/04/2024	2/04/2024	20.44	-	14.178	405.416	391.238	391.238	Good	0.36	4390	6.99	54.2	259.2	23.7	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW221	25/10/2023	2/04/2024	2/04/2024	19.13	-	14.11	405.496	391.386	391.386	Good	0.81	2072	7.05	-29	176	23.6	High	Brown	No odour	No sheen	HydraSleeve™
0207	MW222	25/10/2023	3/04/2024	3/04/2024	18.99	-	14.321	405.716	391.395	391.395	Good	2.4	2579	7.2	74.5	279.5	23.4	Medium	Cloudy	Organic odour	No sheen	HydraSleeve™
0207	MW223	25/10/2023	3/04/2024	3/04/2024	20.07	-	14.037	405.845	391.808	391.808	Good	3.17	2502	6.96	71	276	24.3	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW229	25/10/2023	3/04/2024	3/04/2024	15.68	-	2.954	405.533	402.579	402.579	Good	0.51	1904	7.46	-30.6	174.4	26.1	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW230	25/10/2023	3/04/2024	3/04/2024	18.98	-	13.426	405.416	391.990	391.990	Good	2.43	2068	6.99	106.5	311.5	23.5	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
0207	MW232	25/10/2023	3/04/2024	3/04/2024	12.06	-	11.078	405.898	394.820	394.820	Good	0.68	218	6.75	97.7	302.7	24.1	Low	clear	No odour	No sheen	HydraSleeve™ removed and bailer used.
0207	MW233	26/10/2023	3/04/2024	3/04/2024	17.75	-	14.316	406.470	392.154	392.154	Good	1.47	859	7.23	108.4	313.4	25	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW235	26/10/2023	4/04/2024	4/04/2024	22.59	-	14.758	406.308	391.550	391.550	Good	2.43	1920	6.94	-45.3	159.7	22.5	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW236	26/10/2023	4/04/2024	4/04/2024	16.21	-	14.601	405.653	391.052	391.052	Good	1.62	1641	6.76	-43.6	161.4	22	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW241	26/10/2023	4/04/2024	4/04/2024	18.12	-	14.493	405.883	391.390	391.390	Good	3.7	781	7.09	-65.2	139.8	22.1	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW243	26/10/2023	5/04/2024	5/04/2024	6.82	-	6.542	402.030	395.488	395.488	Good	-	-	-	-	-	-	-	-	-	-	HydraSleeve™, Insufficient volume for parameters.
0207	MW245	26/10/2023	5/04/2024	5/04/2024	22.13	-	14.206	402.981	388.775	388.775	Good	5.69	1514	6.92	-29	176	23.1	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW249	26/10/2023	4/04/2024	4/04/2024	18.71	-	13.777	404.769	390.992	390.992	Good	3.83	1619	7.19	-91.1	113.9	22.5	Medium	Brown	No odour	No sheen	HydraSleeve™
0207	MW252	26/10/2023	4/04/2024	4/04/2024	16.61	-	14.157	406.162	392.005	392.005	Good	1.17	636	6.77	-108.2	96.8	22.1	Low	Cloudy	No odour	No sheen	HydraSleeve™
0207	MW255	26/10/2023	10/04/2024	10/04/2024	24.11	-	11.39	406.162	394.772	394.772	Good	0.1	2457	7.1	110.5	315.5	20.6	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW257	26/10/2023	10/04/2024	10/04/2024	23.96	-	12.752	400.833	388.081	388.081	Good	0.05	2567	7.15	25.8	230.8	20.6	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
0207	MW262	26/10/2023	11/04/2024	11/04/2024	17.82	-	10.958	398.329	387.371	387.371	Good	1.86	1750	7.03	-229.6	-24.6	20.9	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW265	14/04/2023	11/04/2024	11/04/2024	19.13	-	15.396	408.398	393.002	393.002	Good	0.51	1077	6.92	-342.1	-137.1	22.6	Low	Brown	Organic odour	No sheen	HydraSleeve™. New bolts required.
0207	MW266	13/04/2023	11/04/2024	11/04/2024	21.24	-	13.061	401.316	388.255	388.255	Good	1.04	3560	6.96	-220.4	-15.4	21.7	Medium	Brown	No odour	No sheen	HydraSleeve™
0207	MW267	18/04/2023	8/04/2024	8/04/2024	47.37	-	12.191	401.392	389.201	389.201	Good	0	9075	9.29	-39	166	22.1	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW268	18/04/2023	8/04/2024	8/04/2024	20.02	-	11.715	401.323	389.608	389.608	Good	0.01	3381	6.91	-20	185	21.4	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW269	25/10/2023	8/04/2024	8/04/2024	89.100	-	34.115	401.958	367.843	367.843	Good	0.33	1244	11.22	-66.6	138.4	22.7	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW270	10/05/2023	Blocked at 9.44 mbgl due to roots.																			Not sampled
0207	MW271	10/05/2023	10/04/2024	10/04/2024	63.280	-	11.936	403.855	391.919	391.919	Good	0.10	255.2	7.59	-74.2	130.8	20.1	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
0207	MW272	26/10/2023	8/04/2024	8/04/2024	19.970	-	11.208	397.972	386.764	386.764	Good	0.00	2627	7.15	52.5	257.5	21.6	Clear	Brown	No odour	No sheen	HydraSleeve™. New bolts required.
0207	MW273	13/04/2023	8/04/2024	8/04/2024	65.9	-	18.059	398.044	379.985	379.985	Good	0.5	1180	8.34	-109.1	95.9	22.3	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW274	14/03/2023	11/04/2024	11/04/2024	31.78	-	12.799	399.947	387.148	387.148	Good	0.46	1204	7.44	-235.8	-30.8	30.8	Clear	Brown	No odour	No sheen	HydraSleeve™
0207	MW275	14/04/2023	11/04/2024	11/04/2024	55.47	-	12.745	399.911	387.166	387.166	Good	0.47	775	7.7	-240.7	-35.7	20.5	High	Grey/black	Sulfuric odour	No sheen	HydraSleeve™
0207	MW276	26/10/2023	11/04/2024	11/04/2024	20.75	-	13.093	400.474	387.381	387.381	Good	0.43	3006	7	212.5	417.5	20.11	High	Brown	No odour	No sheen	HydraSleeve™
0207	MW278	14/04/2023	11/04/2024	11/04/2024	22.05	-	8.557	404.155	395.598	395.598	Good	0.63	1248	6.96	104.4	309.4	23	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
0207	MW279	-	-	-	Not found																	Not found
0207	MW280	14/04/2023	11/04/2024	11/04/2024	30.04	-	10.866	398.486	387.620	387.620	Good	0.34	2052	7.19	-356	-151	21.6	Clear	Clear	Sulfuric odour	No sheen	HydraSleeve™
0207	MW281	14/04/2023	10/04/2024	10/04/2024	18.5	-	8.379	396.856	388.477	388.477	Good	0.01	2215	6.78	69.6	274.6	19.3	Low	Brown	No odour	No sheen	HydraSleeve™
0207	MW282	14/04/2023	11/04/2024	11/04/2024	16	-	5.069	397.327	392.258	392.258	Good	1.14	1831	6.72	-292.4	-87.4	22.3	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW283	18/04/2023	11/04/2024	11/04/2024	15	-	8.672	395.371	386.699	386.699	Good	0.62	452.4	7.37	-229.9	-24.9	19.1	Medium	Brown	Sulfuric odour	No sheen	HydraSleeve™. New bolts required.
0207	MW285	14/04/2023	11/04/2024	11/04/2024	10.67	-	5.649	398.331	392.682	392.682	Good	3.54	1644	7.54	-246.7	-41.7	22.1	Medium	Grey/black	No odour	No sheen	HydraSleeve™
0207	MW288	18/04/2023	10/04/2024	10/04/2024	21.71	-	14.3	402.161	387.861	387.861	Good	0.01	1069	7.55	10.3	215.3	18.5	High	Brown	No odour	No sheen	HydraSleeve™

Table T1 Groundwater Gauging and Quality Parameter Field Measurement Results

Property ID	Well ID	Date Hydrasleeve Installed	Date Bore/Well Sampled	Gauging Date	Well Depth (mbtoc)	Depth to LNAPL (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Corrected Groundwater Elevation (mAHD)*	Condition of Gatic	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	MW289	-	-	-	Dry																	Dry
0207	MW290	19/04/2023	9/04/2024	9/04/2024	19.72	-	8.089	403.688	395.599	395.599	Good	0.01	3822	6.84	-169.8	35.2	20.2	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW291	19/04/2023	9/04/2024	9/04/2024	56.64	-	14.395	403.709	389.314	389.314	Good	0.26	1584	7.7	-168.8	36.2	19.9	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
0207	MW292	17/04/2023	9/04/2024	9/04/2024	18.92	-	6.561	401.818	395.257	395.257	Good	0.01	4481	6.74	48.4	253.4	20.8	Clear	Clear	No odour	No sheen	HydraSleeve™. New bolts required.
0207	MW293	17/04/2023	9/04/2024	9/04/2024	60.36	-	37.126	402.021	364.895	364.895	Good	0.41	3179	11.71	-111.3	93.7	23.1	Clear	Clear	No odour	No sheen	HydraSleeve™
0207	MW294	18/04/2023	8/04/2024	8/04/2024	18.3	-	8.67	403.780	395.110	395.110	Damaged	0.01	2270	7.39	-17	188	22.1	Clear	Clear	No odour	No sheen	HydraSleeve™. Well cover repair required.
0207	MW295	18/04/2023	8/04/2024	8/04/2024	10.73	-	8.176	402.837	394.661	394.661	Good	0.2	909	9.98	-44.4	160.6	23.4	Low	Clear	No odour	No sheen	HydraSleeve™
0207	MW296	-	-	-	Permission not granted																	Not sampled as no access permission
0207	MW297	-	-	-	Permission not granted																	Not sampled as no access permission
0207	MW299	24/10/2023	2/04/2024	2/04/2024	15.48	-	12.268	403.970	391.702	391.702	Good	0.62	5766	6.69	101.8	306.8	23.5	Low	Clear	No odour	No sheen	HydraSleeve™
0207	MW300	24/10/2023	2/04/2024	2/04/2024	16.34	-	13.213	403.715	390.502	390.502	Good	1.32	5446	6.73	111.5	316.5	24.2	High	Brown	No odour	No sheen	HydraSleeve™. New bolts required.
207	MW562	26/10/2023	4/04/2024	4/04/2024	19.33	-	12.807	402.720	389.913	389.913	Good	0.79	1499	7.07	-73.5	131.5	22.6	Medium	Brown	No odour	No sheen	HydraSleeve™
207	MW563	26/10/2023	4/04/2024	4/04/2024	16.48	-	12.756	402.900	390.144	390.144	Good	4.71	1534	7	19	224	22.3	Clear	Clear	No odour	No sheen	HydraSleeve™

* = Corrected Groundwater Elevation, $h_c = h_{measured} + (H_{PSH} * (r_{PSH}/r_{water}))$

mbtoc is metres below top of casing
mAHD is metres above Australian height datum
LNAPL is light non-aqueous phase liquid
DO is dissolved oxygen
EC is electrical conductivity
E_h is oxidation reduction potential
Oxidation reducation potential (E_r) measured with a platinum electrode and a silver/silver chloride reference electrode (E_r) and converted to E_h by $E_h = E_r + 205$ mV (based on a groundwater temperature of 21°C)
Temp is Temperature
µS/cm is microsiemens per centrimetre
ºC is degrees Celcius
mV is millivolts

Table T2 Groundwater PFAS Analytical Results

							Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids									Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				
						Sum of PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	Sum of PFAS
		Units				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
		LOR				0.01	0.02	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	0.05	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP HEPA 2020 Drinking Water						**0.07**											**0.56**																	
PFAS NEMP HEPA 2020 Freshwater 99%											*0.00023*						*19*																	
Site_ID	**Field ID**	**Location ID**	**Date**	**SampleCode**	**Type**																													
1435	MW001	1435_MW001_240405	05 Apr 2024	EB2412368001	Normal	**0.22**	0.04	0.03	0.14	<0.02	*0.08*	<0.02	<0.1	0.15	0.12	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	0.68
1435	MW002	1435_MW002_240405	05 Apr 2024	EB2412368002	Normal	**1.28**	0.57	0.34	1.24	<0.02	*0.04*	<0.02	1.8	18.8	15.2	6.52	0.24	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.17	<0.05	<0.05	45.1
1435	MW003	1435_MW003_240404	04 Apr 2024	EB2412368003	Normal	**9**	0.91	1	4.88	0.26	*4.12*	<0.02	0.2	0.42	1.3	0.39	**0.61**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	14.3
1435	MW004	1435_MW004_240404	04 Apr 2024	EB2412368004	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
1435	MW005	1435_MW005_240404	04 Apr 2024	EB2412368005	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
1435	MW006	1435_MW006_240404	04 Apr 2024	EB2412368006	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
1435	MW008	1435_MW008_240405	05 Apr 2024	EB2412368007	Normal	0.02	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
1435	MW009	1435_MW009_240404	04 Apr 2024	EB2412368008	Normal	**9.47**	0.75	0.81	4.19	0.24	*5.28*	<0.02	0.1	0.46	1.2	0.31	0.5	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	14.1
1435	MW010	1435_MW010_240404	04 Apr 2024	EB2412368009	Normal	**0.82**	0.19	0.14	0.7	<0.02	*0.12*	<0.02	0.1	0.33	0.37	0.14	0.12	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.25
1435	MW011	1435_MW011_240404	04 Apr 2024	EB2412368010	Normal	**0.17**	0.06	0.04	0.15	<0.02	*0.02*	<0.02	<0.1	0.04	0.07	0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41
1435	MW012	1435_MW012_240405	05 Apr 2024	EB2412368011	Normal	**0.66**	0.14	0.09	0.4	<0.02	*0.26*	<0.02	0.2	1.89	0.98	0.09	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.12
1435	MW013	1435_MW013_240405	05 Apr 2024	EB2412368012	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
1435	MW017	1435_MW017_240405	05 Apr 2024	EB2412368013	Normal	**0.37**	0.07	0.07	0.33	<0.02	*0.04*	<0.02	<0.1	0.03	0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.69
0207	MW003	0207_MW003_240408	08 Apr 2024	EB2412378001	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW019	0207_MW019_240409	09 Apr 2024	EB2412281001	Normal	0.07	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
0207	MW021	0207_MW021_240409	09 Apr 2024	EB2412284001	Normal	**6.16**	0.19	0.19	1.71	0.2	*4.45*	<0.02	<0.1	0.06	0.27	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.32
0207	MW038	0207_MW038_240408	08 Apr 2024	EB2412280001	Normal	**0.8**	0.04	0.04	0.22	<0.02	*0.58*	<0.02	<0.1	<0.02	0.04	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.95
0207	MW056	0207_MW056_240409	09 Apr 2024	EB2412273001	Normal	**0.23**	0.03	<0.02	0.16	<0.02	*0.07*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.29
0207	MW113	0207_MW113_240410	10 Apr 2024	EB2412376001	Normal	**0.27**	0.02	0.02	0.16	<0.02	*0.11*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.34
0207	MW114	0207_MW114_240410	10 Apr 2024	EB2412382001	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW118	0207_MW118_240410	10 Apr 2024	EB2412382002	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW122	0207_MW122_240410	10 Apr 2024	EB2412382003	Normal	**1.78**	0.18	0.17	1.08	0.04	*0.7*	<0.02	<0.1	0.1	0.32	0.05	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.77
0207	MW132	0207_MW132_240503	03 May 2024	EB2414906001	Normal	**11.4**	0.72	0.82	6.24	0.27	*5.2*	<0.02	0.3	0.37	1.62	0.24	0.42	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16.5
0207	MW134	0207_MW134_240410	10 Apr 2024	EB2412269001	Normal	0.05	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
0207	MW147	0207_MW147_240409	09 Apr 2024	EB2412285001	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW149	0207_MW149_240409	09 Apr 2024	EB2412274001	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW151	0207_MW151_240409	09 Apr 2024	EB2412275001	Normal	0.02	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
0207	MW157	0207_MW157_240410	10 Apr 2024	EB2412382004	Normal	**5.5**	0.36	0.34	2.09	0.21	*3.41*	<0.02	0.1	0.15	0.61	0.09	0.15	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.68
0207	MW167	0207_MW167_240402	02 Apr 2024	EB2412403001	Normal	**6.71**	0.46	0.41	2.2	0.21	*4.51*	<0.02	0.2	0.23	0.9	0.15	0.29	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	9.75
0207	MW172	0207_MW172_240402	02 Apr 2024	EB2412403002	Normal	**9.51**	0.46	0.45	2.68	0.18	*6.83*	<0.02	0.7	3.07	1.44	0.8	**0.62**	0.08	0.03	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.2	0.57	<0.05	19.3
0207	MW173	0207_MW173_240402	02 Apr 2024	EB2412403003	Normal	**4.12**	0.26	0.26	2.14	0.12	*1.98*	<0.02	0.3	0.98	1.09	0.51	0.45	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.17	<0.05	<0.05	8.45
0207	MW174	0207_MW174_240403	03 Apr 2024	EB2412403004	Normal	0.03	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03
0207	MW174	0207_QC101_240403	03 Apr 2024	EB2412403050	Field_D	0.03	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03
0207	MW174	0207_QC201_240403	03 Apr 2024	N24/008163	Interlab_D	0.016	<0.01	<0.01	0.016	<0.01	<0.02	<0.01	<0.05	0.1	0.039	0.027	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.182
0207	MW178	0207_MW178_240403	03 Apr 2024	EB2412403005	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW179	0207_MW179_240403	03 Apr 2024	EB2412403006	Normal	**4.51**	0.42	0.33	1.88	0.17	*2.63*	<0.02	0.2	0.22	1.03	0.19	0.31	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.51
0207	MW187	0207_MW187_240403	03 Apr 2024	EB2412403007	Normal	**0.51**	0.03	0.04	0.33	<0.02	*0.18*	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.64
0207	MW189	0207_MW189_240403	03 Apr 2024	EB2412403008	Normal	**0.11**	<0.02	<0.02	0.06	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11
0207	MW193	0207_MW193_240402	02 Apr 2024	EB2412403009	Normal	**22.3**	1.75	1.93	11	0.74	*11.3*	<0.02	6.3	1.15	4.38	1.05	**1.46**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	41.8
0207	MW198	0207_MW198_240402	02 Apr 2024	EB2412403010	Normal	**11.2**	0.26	0.24	2.04	0.3	*9.13*	<0.02	0.2	0.33	0.64	0.2	0.34	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.8
0207	MW201	0207_MW201_240402	02 Apr 2024	EB2412403011	Normal	**72**	9.34	10.1	67.9	4.94	*4.09*	<0.02	1.9	3.07	12.9	2.33	**5.8**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.48	<0.05	<0.05	127
0207	MW202	0207_MW202_240402	02 Apr 2024	EB2412403012	Normal	**370**	11.9	12	96.7	7.87	*273*	0.13	2.4	4.71	20.1	3.18	**8.53**	0.2	0.02	<0.02	<0.02	<0.05	0.34	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.28	<0.05	<0.05	447
0207	MW203	0207_MW203_240402	02 Apr 2024	EB2412403013	Normal	**5.1**	0.64	0.64	4.54	0.1	*0.56*	<0.02	0.2	0.28	0.97	0.12	0.13	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.46
0207	MW204	0207_MW204_240402	02 Apr 2024	EB2412403014	Normal	**898**	71.1	86.7	596	28.6	*302*	<0.02	14.6	20.9	93.6	15.6	***31.9***	0.21	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.4	<0.05	<0.05	1,300
0207	MW205	0207_MW205_240402	02 Apr 2024	EB2412403015	Normal	**12.3**	1.44	1.38	6.74	0.19	*5.56*	<0.02	0.3	0.6	2.22	0.22	0.17	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	19.5
0207	MW205	0207_QC100_240402	02 Apr 2024	EB2412403052	Field_D	**11.6**	1.29	1.28	6.6	0.18	*4.98*	<0.02	0.3	0.66	2.46	0.23	0.18	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	18.8
0207	MW205	0207_QC200_240402	02 Apr 2024	N24/008164	Interlab_D	**8.1**	1.6	1.3	5.2	0.11	*2.9*	<0.01	0.35	0.53	1.6	0.18	0.13	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	13.9
0207	MW207	0207_MW207_240402	02 Apr 2024	EB2412403016	Normal	**1.59**	0.12	0.12	0.97	0.04	*0.62*	<0.02	<0.1	0.06	0.14	0.05	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.21
0207	MW221	0207_MW221_240402	02 Apr 2024	EB2412403017	Normal	**3.2**	0.25	0.24	1.45	0.1	*1.75*	<0.02	0.1	0.19	0.63	0.18	0.26	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.23
0207	MW222	0207_MW222_240403	03 Apr 2024	EB2412403018	Normal	**18.1**	0.41	0.43	3.21	0.42	*14.9*	<0.02	0.6	1.33	1.73	0.88	**1.3**	0.4	0.03	<0.02	<0.02	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.47	0.1	<0.05	26.4
0207	MW223	0207_MW223_240403	03 Apr 2024	EB2412403019	Normal	**17.4**	0.54	0.65	5.16	0.5	*12.2*	<0.02	4.6	26.6	12.9	10	**5.9**	0.81	0.04	<0.02	<0.02	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	3.57	0.3	<0.05	84
0207	MW229	0207_MW229_240403	03 Apr 2024	EB2412403020	Normal	**39.7**	0.55	0.64	8.08	0.59	*31.6*	<0.02	0.1	0.26	1.56	0.14	0.51	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	44.4
0207	MW229	0207_QC102_240403	03 Apr 2024	EB2412403054	Field_D	**34.1**	0.47	0.58	6.76	0.58	*27.3*	<0.02	0.1	0.27	1.72	0.14	0.52	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	38.8
0207	MW229	0207_QC202_240403	03 Apr 2024	N24/008165	Interlab_D	**22.3**	0.52	0.59	5.3	0.42	*17*	<0.01	0.14	0.24	1.4	0.12	0.4	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	26.13
0207	MW230	0207_MW230_240403	03 Apr 2024	EB2412403021	Normal	**5.34**	0.29	0.31	1.92	0.14	*3.42*	<0.02	1.9	6.57	4.08	2.51	**1.54**	0.34	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.72	<0.05	<0.05	23.8
0207	MW230	0207_QC103_240403	03 Apr 2024	EB2412403056	Field_D	**4.84**	0.26	0.33	2.11	0.14	*2.73*	<0.02	1.8	6.76	4.44	2.47	**1.51**	0.31	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.68	0.06	<0.05	23.7
0207	MW230	0207_QC203_240403	03 Apr 2024	N24/008166	Interlab_D	**3.3**	0.28	0.26	1.7	0.078	*1.6*	<0.01	1.9	4.7	2.7	1.6	**1.4**	0.29	0.011	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	0.56	0.031	<0.01	17.11
0207	MW232	0207_MW232_240403	03 Apr 2024	EB2412403022	Normal	**8.21**	0.12	0.1	0.97	0.1	*7.24*	<0.02	0.2	0.76	0.54	0.49	0.46	0.18	0.21	<0.02	<0.02	<0.05	0.04	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	1.06	<0.05	12.6
0207	MW233	0207_MW233_240403	03 Apr 2024	EB2412403023	Normal	**0.67**	0.08	0.06	0.48	<0.02	*0.19*	<0.02	<0.1	0.03	0.09	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.98
0207	MW233	0207_QC104_240403	03 Apr 2024	EB2412403058	Field_D	**0.76**	0.08	0.08	0.59	<0.02	*0.17*	<0.02	<0.1	0.03	0.09	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.09
0207	MW233	0207_QC204_240403	03 Apr 2024	N24/008167	Interlab_D	**0.66**	0.096	0.066	0.5	<0.01	*0.16*	<0.01	<0.05	0.024	0.065	<0.01	0.023	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.93
0207	MW235	0207_MW235_240404	04 Apr 2024	EB2412403024	Normal	**11**	3.84	2.83	6.41	0.18	*4.63*	<0.02	1.2	1.63	6.14	0.33	0.24	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29.4
0207	MW236	0207_MW236_240404	04 Apr 2024	EB2412403025	Normal	**5.02**	1.64	1.15	4.18	0.13	*0.84*	<0.02	0.6	0.65	2.81	0.28	0.38	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.2
0207	MW236	0207_QC107_240404	04 Apr 2024	EB2412403064	Field_D	**5.19**	1.46	1.21	4.51	0.11	*0.68*	<0.02	0.6	0.7	2.85	0.25	0.34	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.3
0207	MW236	0207_QC207_240404	04 Apr 2024	N24/008170	Interlab_D	**2.97**	1.7	1.1	2.5	0.045	*0.47*	<0.01	0.65	0.57	1.6	0.2	0.25	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	0.051	<0.01	<0.01	9.14
0207	MW241	0207_MW241_240404	04 Apr 2024	EB2412403026	Normal	**4.98**	0.08	0.09	0.79	0.08	*4.19*	<0.02	<0.1	0.04	0.13	0.03	0.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.52
0207	MW241	0207_QC106_240404	04 Apr 2024	EB2412403062	Field_D	**4.97**	0.08	0.09	0.89	0.1	*4.08*	<0.02	<0.1	0.05	0.14	0.03	0.09	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.55

						Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				
						Sum of PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	Sum of PFAS
					Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
					LOR	0.01	0.02	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	0.05	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP HEPA 2020 Drinking Water						**0.07**											**0.56**																
PFAS NEMP HEPA 2020 Freshwater 99%											*0.00023*						*19*																
0207	MW241	0207_QC206_240404	04 Apr 2024	N24/008169	Interlab_D	**3.2**	0.086	0.094	0.8	0.048	*2.4*	<0.01	0.051	0.037	0.11	0.022	0.066	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3.71
0207	MW243	0207_MW243_240405	05 Apr 2024	EB2412403027	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW245	0207_MW245_240405	05 Apr 2024	EB2412403028	Normal	**0.22**	0.03	0.02	0.14	<0.02	*0.08*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.31
0207	MW249	0207_MW249_240404	04 Apr 2024	EB2412403029	Normal	**3.52**	0.68	0.76	3.33	0.05	*0.19*	<0.02	0.2	0.44	1.39	0.17	0.11	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.58
0207	MW249	0207_QC108_240404	04 Apr 2024	EB2412403066	Field_D	**4.3**	0.7	0.92	4.13	0.05	*0.17*	<0.02	0.2	0.47	1.54	0.19	0.12	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.77
0207	MW249	0207_QC208_240404	04 Apr 2024	N24/008171	Interlab_D	**2.73**	0.84	0.85	2.6	0.025	*0.13*	<0.01	0.26	0.36	1.2	0.15	0.079	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	6.49
0207	MW252	0207_MW252_240404	04 Apr 2024	EB2412403030	Normal	**14.6**	0.79	0.74	3.33	0.2	*11.3*	<0.02	0.4	0.75	1.18	0.33	0.45	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	19.8
0207	MW252	0207_QC105_240404	04 Apr 2024	EB2412403060	Field_D	**15.9**	0.71	0.86	4.43	0.25	*11.5*	<0.02	0.3	0.77	1.37	0.35	0.45	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	21.3
0207	MW252	0207_QC205_240404	04 Apr 2024	N24/008168	Interlab_D	**10.9**	0.84	0.77	3.1	0.16	*7.8*	<0.01	0.41	0.67	1.1	0.31	0.41	0.023	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	15.59
0207	MW255	0207_MW255_240410	10 Apr 2024	EB2412403031	Normal	**0.23**	0.02	<0.02	0.13	<0.02	*0.1*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.27
0207	MW257	0207_MW257_240410	10 Apr 2024	EB2412403032	Normal	**0.2**	<0.02	<0.02	0.09	<0.02	*0.11*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.2
0207	MW262	0207_MW262_240411	11 Apr 2024	EB2412403033	Normal	**0.36**	0.05	0.04	0.2	<0.02	*0.16*	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.52
0207	MW265	0207_MW265_240411	11 Apr 2024	EB2412403034	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW266	0207_MW266_240411	11 Apr 2024	EB2412403035	Normal	**5.12**	0.43	0.39	2.19	0.16	*2.93*	<0.02	0.2	0.22	0.86	0.15	0.23	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.9
0207	MW267	0207_MW267_240408	08 Apr 2024	EB2412425003	Normal	**0.37**	0.03	<0.02	0.14	<0.02	*0.23*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.42
0207	MW268	0207_MW268_240408	08 Apr 2024	EB2412425004	Normal	**0.74**	0.13	0.13	0.6	<0.02	*0.14*	<0.02	<0.1	0.04	0.21	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.27
0207	MW269	0207_MW269_240408	08 Apr 2024	EB2412425005	Normal	0.07	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	0.23
0207	MW271	0207_MW271_240410	10 Apr 2024	EB2412425006	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	0.03	0.02	0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
0207	MW272	0207_MW272_240408	08 Apr 2024	EB2412403044	Normal	**0.44**	0.05	0.06	0.33	<0.02	*0.11*	<0.02	<0.1	<0.02	0.08	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.66
0207	MW273	0207_MW273_240408	08 Apr 2024	EB2412403036	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW274	0207_MW274_240411	11 Apr 2024	EB2412403037	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW275	0207_MW275_240411	11 Apr 2024	EB2412403038	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW276	0207_MW276_240411	11 Apr 2024	EB2412403045	Normal	**15.1**	0.52	0.71	5.91	0.37	*9.22*	<0.02	0.2	0.24	1.17	0.18	0.38	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	19.1
0207	MW278	0207_MW278_240411	11 Apr 2024	EB2412403039	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW280	0207_MW280_240411	11 Apr 2024	EB2412403040	Normal	**0.16**	<0.02	<0.02	0.08	<0.02	*0.08*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.16
0207	MW281	0207_MW281_240411	11 Apr 2024	EB2412403041	Normal	**2.47**	0.16	0.14	0.81	0.07	*1.66*	<0.02	<0.1	0.06	0.2	0.05	0.12	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.3
0207	MW282	0207_MW282_240411	11 Apr 2024	EB2412403042	Normal	**0.96**	0.02	0.02	0.28	<0.02	*0.68*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1
0207	MW283	0207_MW283_240411	11 Apr 2024	EB2412378002	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW285	0207_MW285_240411	11 Apr 2024	EB2412403043	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW288	0207_MW288_240410	10 Apr 2024	EB2412283001	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW290	0207_MW290_240409	09 Apr 2024	EB2412277001	Normal	**0.15**	0.05	0.03	0.13	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.23
0207	MW291	0207_MW291_240409	09 Apr 2024	EB2412277002	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW292	0207_MW292_240409	09 Apr 2024	EB2412372001	Normal	**0.28**	<0.02	<0.02	0.11	<0.02	*0.17*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.28
0207	MW293	0207_MW293_240409	09 Apr 2024	EB2412372002	Normal	0.02	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
0207	MW294	0207_MW294_240408	08 Apr 2024	EB2412425007	Normal	**1.3**	0.07	0.08	0.66	0.04	*0.64*	<0.02	0.4	0.52	0.36	0.17	0.17	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.16
0207	MW295	0207_MW295_240408	08 Apr 2024	EB2412425008	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	MW299	0207_MW299_240402	02 Apr 2024	EB2412403046	Normal	**37.1**	1.98	1.91	8.92	0.65	*28.2*	<0.02	0.7	1.34	4.7	0.96	**1.79**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	51.7
0207	MW300	0207_MW300_240402	02 Apr 2024	EB2412403047	Normal	**63**	3.21	3.16	17.8	2.48	*45.2*	<0.02	1.3	2.06	7.24	1.83	**5.11**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.09	<0.05	<0.05	90.2
0207	MW562	0207_MW562_240404	04 Apr 2024	EB2412403048	Normal	**0.21**	0.06	0.05	0.17	<0.02	*0.04*	<0.02	<0.1	0.09	0.12	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59
0207	MW563	0207_MW563_240404	04 Apr 2024	EB2412403049	Normal	**16.6**	2.26	2.57	15.9	0.25	*0.71*	<0.02	0.6	1.02	4.15	0.72	**0.82**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29.8
0207	MW563	0207_QC109_240404	04 Apr 2024	EB2412403068	Field_D	**17**	2.16	2.57	16.4	0.24	*0.62*	<0.02	0.6	1	4.06	0.66	**0.72**	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29.8
0207	MW563	0207_QC209_240404	04 Apr 2024	N24/008172	Interlab_D	**14.48**	1.9	2.1	14	0.19	*0.48*	<0.01	0.64	0.88	2.3	0.57	**0.6**	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	0.035	<0.01	<0.01	23.7

LOR is limit of reporting
µg/L is micrograms per litre
-' denotes no analysis undertaken
<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Table T3 Surface Water Quality Parameter Field Measurement Results

Property ID	Location ID	Location	Sample Date	DO (mg/L) *Field measurement*	EC (µS/cm) *Field measurement*	pH *Field measurement*	E_r (mV) *Field measurement*	E_h (mV)	Temp (°C) *Field measurement*	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0207	SW004	Oakey Creek	12/04/2024	5.05	803	8.02	-246.6	-41.6	19.9	High	Brown	No odour	No sheen	Grab sample
0207	SW009	Drain 2	12/04/2024	1.63	1184	6.96	-211.5	-6.5	16.8	Low	Brown	No odour	No sheen	Grab sample
0207	SW010	Oakey Creek	12/04/2024	3.24	512	7.36	-291.4	-86.4	19.6	Medium	Brown	No odour	No sheen	Grab sample
0207	SW011	Oakey Creek	12/04/2024	0.86	502	6.95	-226.7	-21.7	17.6	Medium	Brown	No odour	No sheen	Grab sample
0207	SW012	Oakey Creek	12/04/2024	2.75	572	7.2	-154.1	50.9	19.3	High	Brown	No odour	No sheen	Grab sample
0207	SW013	Oakey Creek	12/04/2024	2.8	360.7	7.23	-113.9	91.1	17.3	Medium	Brown	No odour	No sheen	Grab sample
0207	SW019	Drain 3	12/04/2024	-	-	-	-	-	-	-	-	-	-	Dry
0207	SW021	Drain 3	3/04/2024	-	-	-	-	-	-	-	-	-	-	Dry
0207	SW024	Drain 2	3/04/2024	3.66	474.6	6.88	88.7	293.7	28.1	Clear	Brown	No odour	No sheen	Grab sample
0207	SW025	Drain 2	12/04/2024	3.12	124.4	6.95	-317.5	-112.5	20.8	Clear	Brown	No odour	No sheen	Grab sample
0207	SW026	Drain 1	12/04/2024	4.11	158	7.22	-268.1	-63.1	20.6	Medium	Clear/Brown	No odour	No sheen	Grab sample
0207	SW027	Drain 2	12/04/2024	3.14	110.9	6.98	-283.9	-78.9	31.5	Clear	Brown	No odour	No sheen	Grab sample
0207	SW028	Westbrook Creek	12/04/2024	5.48	836	7.86	-164.4	40.6	18.7	Medium	Brown	No odour	No sheen	Grab sample
0207	SW032	Oakey Creek	8/04/2024	5.56	804	7.78	-30.4	-	24.8	Mdeium	Brown	No odour	No sheen	Grab sample
0207	SW040	Oakey Creek	12/04/2024	5.41	187.7	7.4	-72.2	132.8	18.9	High	Brown	No odour	No sheen	Grab sample
0207	SW043	Doctor Creek	12/04/2024	4.07	175.8	7.33	-128.9	76.1	15.1	Medium	Brown	No odour	No sheen	Grab sample
0207	SW056	Oakey Creek	8/04/2024	3.44	1022	7.82	-19	186	25.7	Low	Brown	No odour	No sheen	Grab sample
0207	SW057	Drain 3	10/04/2024	4.84	157.5	7.4	-77.7	127.3	22.7	Medium	Brown	No odour	No sheen	Grab sample
0207	SW059	Oakey Creek	8/04/2024	3.01	577	7.86	40.7	245.7	23.1	Medium	Brown	Organic odour	No sheen	Grab sample
0207	SW063	Drain 3	3/04/2024	-	-	-	-	-	-	-	-	-	-	Dry
0207	SW065	Drain 1	5/04/2024	3.84	172.7	7.08	-52.3	152.7	26.4	Low	Brown	No odour	No sheen	Grab sample
0207	SW066	Drain 1	5/04/2024	1.14	156.3	6.71	-129.6	75.4	27.2	Low	Brown	No odour	No sheen	Grab sample

DO is dissolved oxygen
EC is electrical conductivity
E_h is oxidation reduction potential
Oxidation reducation potential (E_r) measured with a platinum electrode and a silver/silver chloride reference electrode (E_r) and converted to E_h by $E_h = E_r + 205$ mV (based on a groundwater temperature of 21°C)
Temp is Temperature
µS/cm is microsiemens per centrimetre
ºC is degrees Celcius
mV is millivolts

Table T4 Surface Water PFAS Analytical Results

			Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				
		Sum of PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	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	0.05	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP HEPA 2020 Freshwater 99%							*0.00023*						*19*																	
PFAS NEMP HEPA 2020 Recreational Water		**2**											**10**																	
Site_ID	**Field ID**	**Location ID**	**Location**	**Date**	**Lab Report No.**	**Type**																									
0207	SW004	0207_SW004_240412	Oakey Creek	12 Apr 2024	EB2412387001	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02
0207	SW009	0207_SW009_240412	Drain 2	12 Apr 2024	EB2412387002	Normal	0.67	0.06	<0.02	0.21	<0.02	*0.46*	<0.02	<0.10	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.82
0207	SW010	0207_SW010_240412	Oakey Creek	12 Apr 2024	EB2412387003	Normal	0.05	<0.02	<0.02	<0.02	<0.02	*0.05*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
0207	SW011	0207_SW011_240412	Oakey Creek	12 Apr 2024	EB2412387004	Normal	0.04	<0.02	<0.02	<0.02	<0.02	*0.04*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
0207	SW012	0207_SW012_240412	Oakey Creek	12 Apr 2024	EB2412387005	Normal	0.06	<0.02	<0.02	<0.02	<0.02	*0.06*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
0207	SW013	0207_SW013_240412	Oakey Creek	12 Apr 2024	EB2412387006	Normal	0.38	0.02	<0.02	0.08	<0.02	*0.3*	<0.02	<0.10	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.42
0207	SW024	0207_QC113_240403	Oakey Creek	03 Apr 2024	EB2412387020	Field_D	0.62	<0.02	<0.02	0.06	<0.02	*0.56*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.62
0207	SW024	0207_QC213_240403	Oakey Creek	03 Apr 2024	N24/008175	Interlab_D	0.59	<0.01	<0.01	0.065	<0.01	*0.52*	<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	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.59
0207	SW024	0207_SW024_240403	Drain 2	03 Apr 2024	EB2412387007	Normal	0.6	<0.02	<0.02	0.05	<0.02	*0.55*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.6
0207	SW025	0207_SW025_240412	Drain 2	12 Apr 2024	EB2412387008	Normal	0.4	<0.02	<0.02	0.08	<0.02	*0.32*	<0.02	<0.10	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.44
0207	SW026	0207_SW026_240412	Drain 1	12 Apr 2024	EB2412387009	Normal	0.83	0.07	0.02	0.26	<0.02	*0.57*	<0.02	<0.10	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.03
0207	SW027	0207_SW027_240412	Drain 2	12 Apr 2024	EB2412387010	Normal	0.43	<0.02	<0.02	0.09	<0.02	*0.34*	<0.02	<0.10	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.46
0207	SW028	0207_SW028_240412	Westbrook Creek	12 Apr 2024	EB2412387011	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02
0207	SW032	0207_SW032_240408	Oakey Creek	08 Apr 2024	EB2412425009	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.09	0.1	0.12	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22
0207	SW040	0207_SW040_240412	Oakey Creek	12 Apr 2024	EB2412387012	Normal	<0.01	<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	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	SW043	0207_SW043_240412	Oakey Creek	12 Apr 2024	EB2412387013	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02
0207	SW056	0207_SW056_240408	Oakey Creek	08 Apr 2024	EB2412425011	Normal	0.06	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.07	0.08	0.1	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24
0207	SW057	0207_SW057_240410	Drain 3	08 Apr 2024	EB2412425012	Normal	0.67	<0.02	<0.02	0.17	<0.02	*0.5*	<0.02	<0.10	0.1	0.14	0.09	0.1	0.06	0.03	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.19
0207	SW059	0207_SW059_240408	Oakey Creek	08 Apr 2024	EB2412378003	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0207	SW065	0207_QC111_240405	Oakey Creek	05 Apr 2024	EB2412387016	Field_D	0.57	0.07	<0.02	0.16	<0.02	*0.41*	<0.02	<0.10	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.76
0207	SW065	0207_QC211_240405	Oakey Creek	05 Apr 2024	N24/008173	Interlab_D	0.57	0.058	0.031	0.17	<0.01	*0.4*	<0.01	<0.05	<0.02	0.032	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.69
0207	SW065	0207_SW065_240405	Drain 1	05 Apr 2024	EB2412387014	Normal	0.61	0.06	<0.02	0.18	<0.02	*0.43*	<0.02	<0.10	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.78
0207	SW066	0207_QC112_240405	Drain 1	05 Apr 2024	EB2412387018	Field_D	1.17	0.05	0.03	0.38	<0.02	*0.79*	<0.02	<0.10	0.03	0.06	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.45
0207	SW066	0207_QC212_240405	Drain 1	05 Apr 2024	N24/008174	Interlab_D	0.77	0.059	0.048	0.39	0.016	*0.38*	<0.01	<0.05	0.041	0.072	0.013	0.025	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.04
0207	SW066	0207_SW066_240405	Drain 1	05 Apr 2024	EB2412387015	Normal	1.15	0.06	0.03	0.35	<0.02	*0.8*	<0.02	<0.10	0.03	0.07	0.03	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.46

LOR is limit of reporting
µg/L is micrograms per litre
-' denotes no analysis undertaken
<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Table T5 Sediment Field Observations

Property ID	Location ID	Location	Sample Date	Sample Description	Odour	Sample Method / Comments
0207	SD007	Doctor Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD010	Drain 2	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD011	Drain 2	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD013	Drain 2	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD015	Drain 1	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD016	Drain 3	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD017	Drain 3	10/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD018	Oakey Creek	8/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD022	Drain 1	5/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD024	Drain 2	3/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD025	Drain 3	3/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD032	Oakey Creek	8/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD036	Oakey Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD037	Oakey Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD038	Oakey Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD040	Oakey Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD045	Oakey Creek	8/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD070	Westbrook Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD102	Oakey Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD105	Oakey Creek	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD106	Drain 1	5/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample
0207	SD107	Drain 3	12/04/2024	Silty CLAY, dark brown, saturated, medium plasticity, soft, with organic matter.	No odour	Grab sample

Table T6 Sediment PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids					
	Sum of PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	Sum of PFAS	Moisture Content
Units	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	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.1

Sample ID	Location ID	Location	Date	Sample Code	Lab Report #	Type																										
0207	SD007	Doctor Creek	0207_SD007_240412	12 Apr 2024	EB2412387022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	36.9
0207	SD010	Drain 2	0207_SD010_240412	12 Apr 2024	EB2412387045	Normal	0.0114	<0.0002	<0.0002	0.0005	<0.0002	0.0109	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0114	37.2
0207	SD011	Drain 2	0207_SD011_240412	12 Apr 2024	EB2412387024	Normal	0.0158	<0.0005	<0.0005	<0.0005	<0.0005	0.0158	0.0011	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	0.0169	72.4
0207	SD013	Drain 2	~~0207_SD013_240412~~	~~12 Apr 2024~~	EB2412387025	Normal	~~0.0108~~	~~<0.0002~~	~~<0.0002~~	~~0.0004~~	~~<0.0002~~	~~0.0104~~	~~0.001~~	~~<0.001~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0005~~	0.0004	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	~~<0.0002~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	0.0122	~~40.7~~
~~0207~~	~~SD015~~	~~Drain 1~~	~~0207_SD015_240412~~	~~12 Apr 2024~~	EB2412387026	~~Normal~~	~~0.003~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~0.003~~	~~0.0004~~	~~<0.001~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0002~~	~~<0.0005~~	~~<0.0002~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	~~<0.0002~~	~~<0.0002~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	~~<0.0005~~	0.0034	~~34.9~~
~~0207~~	~~SD016~~	~~Drain 3~~	~~0207~~_SD016_240412	12 Apr 2024	EB2412387027	Normal	0.0101	<0.0002	<0.0002	0.0002	<0.0002	0.0099	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	0.0008	0.0015	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.015	39.3
0207	SD017	Drain 3	0207_SD017_240410	10 Apr 2024	EB2412425001	Normal	0.0139	<0.0002	<0.0002	0.0004	<0.0002	0.0135	0.0016	<0.001	0.0004	0.0002	<0.0002	0.0004	0.0007	0.0024	0.0013	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	0.0009	<0.0005	0.0234	34.4
0207	SD018	Oakey Creek	0207_SD018_240408	08 Apr 2024	EB2412425002	Normal	0.0036	<0.0002	<0.0002	<0.0002	<0.0002	0.0036	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	40.7
0207	SD022	Drain 1	0207_SD022_240405	05 Apr 2024	EB2412387028	Normal	0.0251	<0.0002	<0.0002	0.0009	<0.0002	0.0242	0.0006	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0259	47.6
0207	SD024	Drain 2	0207_QC113_240403	03 Apr 2024	EB2412387040	Field_D	0.0429	<0.0002	<0.0002	0.0018	<0.0002	0.0411	0.0006	<0.001	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0442	42.1
0207	SD024	Drain 2	0207_QC213_240403	03 Apr 2024	N24/008160	Interlab_D	0.029	<0.001	<0.001	<0.001	<0.001	0.029	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	0.029	-
0207	SD024	Drain 2	0207_SD024_240403	03 Apr 2024	EB2412387029	Normal	0.0199	<0.0002	<0.0002	0.0003	<0.0002	0.0196	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0203	39.2
0207	SD025	Drain 3	0207_QC114_240403	03 Apr 2024	EB2412387042	Field_D	1.24	<0.0002	<0.0002	0.0002	0.0023	1.24	0.019	0.001	0.0028	0.0027	0.0055	0.0148	0.0421	0.744	0.791	0.558	0.483	0.0042	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	0.0044	2.2	0.0448	7.09	18.5
0207	SD025	Drain 3	0207_QC214_240403	03 Apr 2024	N24/008161	Interlab_D	0.0064	<0.001	<0.001	<0.001	<0.001	0.0064	<0.001	<0.002	<0.002	0.0019	0.004	0.0083	0.012	0.034	0.15	0.33	0.27	<0.001	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	0.0061	0.12	0.034	0.977	-
0207	SD025	Drain 3	0207_SD025_240403	03 Apr 2024	EB2412387030	Normal	0.0098	<0.0002	<0.0002	<0.0002	<0.0002	0.0098	0.0009	<0.001	0.0023	0.0026	0.0044	0.0082	0.0121	0.0386	0.139	0.312	0.27	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	0.004	0.146	0.0257	1.39	23.2
0207	SD032	Oakey Creek	0207_SD032_240408	08 Apr 2024	EB2412425010	Normal	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	40.5
0207	SD036	Oakey Creek	0207_SD036_240412	12 Apr 2024	EB2412387031	Normal	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	32.8
0207	SD037	Oakey Creek	0207_SD037_240412	12 Apr 2024	EB2412387032	Normal	0.0083	<0.0002	<0.0002	<0.0002	<0.0002	0.0083	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0083	46.1
0207	SD038	Oakey Creek	0207_SD038_240412	12 Apr 2024	EB2412387033	Normal	0.0017	<0.0004	<0.0004	<0.0004	<0.0004	0.0017	<0.0004	<0.002	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0010	<0.0004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0004	<0.0004	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	54.1
0207	SD040	Oakey Creek	0207_SD040_240412	12 Apr 2024	EB2412387034	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	32.7
0207	SD045	Oakey Creek	0207_SD045_240408	08 Apr 2024	EB2412378004	Normal	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	42.3
0207	SD070	Westbrook Creek	0207_SD070_240412	12 Apr 2024	EB2412387035	Normal	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0011	46.2
0207	SD102	Oakey Creek	0207_SD102_240412	12 Apr 2024	EB2412387036	Normal	0.0175	<0.0004	<0.0004	<0.0004	<0.0004	0.0175	0.0017	<0.002	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0010	<0.0004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0004	<0.0004	<0.0010	<0.0010	<0.0010	<0.0010	0.0192	54
0207	SD105	Oakey Creek	0207_SD105_240412	12 Apr 2024	EB2412387037	Normal	0.0077	<0.0002	<0.0002	<0.0002	<0.0002	0.0077	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	0.0011	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0093	39.7
0207	SD106	Drain 1	0207_SD106_240405	05 Apr 2024	EB2412387038	Normal	0.0498	<0.0002	<0.0002	0.0014	<0.0002	0.0484	<0.0002	<0.001	<0.0002	0.0003	<0.0002	0.0004	0.0005	0.0004	0.0008	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0547	45
0207	SD107	Drain 3	0207_QC115_240403	03 Apr 2024	EB2412387044	Field_D	0.0337	<0.0002	<0.0002	0.0026	0.0003	0.0311	0.0006	<0.001	0.0004	0.0004	0.0004	0.0009	0.0015	0.0052	0.0077	0.0074	0.0052	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	0.0013	<0.0005	0.076	36.8
0207	SD107	Drain 3	0207_QC215_240403	03 Apr 2024	N24/008162	Interlab_D	0.028	<0.001	<0.001	0.0028	<0.001	0.026	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	0.0018	0.006	0.0085	0.0043	0.0028	<0.001	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.052	-
0207	SD107	Drain 3	0207_SD107_240403	03 Apr 2024	EB2412387039	Normal	0.0456	0.0003	<0.0002	0.0031	0.0005	0.0425	0.0011	<0.001	0.0006	0.0005	0.0004	0.001	0.0017	0.0051	0.011	0.011	0.0067	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.103	35.4

LOR is limit of reporting
mg/kg is milligrams per kilogram
µg/kg is micrograms per kilogram
-' denotes no analysis undertaken
<' denotes concentration is less than
Denotes first time detection above LOR

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** SB	**Date:** 21/05/2024
Client:	Department of Defence		
Site:	Swartz Barracks (0207) / Brymaroo Satellite Airfield (1435)		
Matrix type:	Groundwater, surface water, sediment	**Data verified by:**	**Date:** 23/05/2024
No. of primary samples:	89 groundwater, 19 surface water, 20 sediment		
Laboratory:	ALS (Melbourne), NMI (Sydney)	**Project Manager:** JP	
Lab reference:	EB2412269, EB2412273, EB2412274, EB2412275, EB2412277, EB2412279, EB2412280, EB2412281, EB2412283, EB2412284, EB2412285, EB2412372, EB2412376, EB2412378, EB2412382, EB2412387, EB2412403-AA, EB2412403-AB, EB2412425, EB2414906, RN1425992, RN1426141, EB2412368 (1435)		

Key Issues:	With one exception, all data were considered appropriate for use to meet the project objectives. The first-time detection of PFAS in the groundwater sample from MW017 (Brymaroo) is unusual and may be due to the presence of sediment in the sample. Additional sampling would be required to verify the detection. All analytical data have been uploaded and assigned to DERP ESdat.

Field QA/QC

Sampling personnel	Sampling and gauging were conducted by AECOM personnel from 2 to 19 April 2024 and on 3 May 2024.
Sampling Methodology	Groundwater, surface water and sediment samples were collected using appropriate methods as identified within the main body of the report. HydraSleeves were installed in the well for a minimum of 24 hours prior to collection. Surface water samples were collected below the water surface. Sediment samples were collected from within the water body, where possible.
Daily Equipment Calibration	Daily equipment calibration was completed during the sampling event and are attached within **Appendix F**.
Chain of Custody (COC)	COC documents were completed as per AECOM procedures and are attached within **Appendix D**.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day per piece of non-dedicated equipment that was decontaminated (nine in total). Concentrations of all analytes tested were reported below the LOR for rinsate samples (refer **Table C1** attached).
Frequency of field QC	Field duplicates (intra-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected at a target frequency of one in ten primary samples. Target frequencies were met with the following frequency: • Ten duplicates and triplicates for groundwater (11.24%). • Three duplicate and triplicate for surface water (13.64%). • Three duplicate and triplicate for sediment (15.79%).

Handling and preservation	Primary, duplicate, and triplicate samples were received, preserved, and chilled at the laboratory. The primary laboratory reported sample receipt temperature between 6.5°C and 11.3°C with ice present in all eskies. The secondary laboratory noted that the samples were chilled prior to sample receipt, however no temperature was recorded. All samples were received at the laboratory in appropriate sample containers with no sample container / preservation non-compliances noted.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times, with exception of 0207_SD032_240408 in batch EB2412425 which was analysed seven days overdue for moisture content; moisture content may be under-reported for this sample, however, is unlikely to have a material impact on the interpretation of results.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Melbourne) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at the National Measurement Institute (Sydney), also a NATA accredited laboratory.

Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except:
	• Laboratory duplicates for PFAS (water matrix) were below the expected rate of 10.00% in the following batches:
	  • EB2412269, EB2412273, EB2412274, EB2412275, EB2412277, EB2412279, EB2412280, EB2412281, EB2412283, EB2412284, EB2412285, EB2378, EB2412382 (20 samples in batch, 0.00% rate achieved)
	  • EB2412372, EB2412376, EB2412387 (12 samples in batch, 0.00% rate achieved)
	  • EB2412403 (72 samples in batch, 0.00% rate achieved)
	  • EB2412425 (13 samples in batch, 7.69% rate achieved)
	  • EB2414906 (18 samples in batch, 5.56% rate achieved)
	  • EB2412368 (40 samples in batch, 0.00% rate achieved)
	• Laboratory matrix spikes for PFAS (water matrix) were below the expected rate of 5.00% in the following batches:
	  • EB2412269, EB2412273, EB2412274, EB2412275, EB2412277, EB2412279, EB2412280, EB2412281, EB2412283, EB2412284, EB2412285, EB2378, EB2412382 (20 samples in batch, 0.00% rate achieved)
	  • EB2412372, EB2412376, EB2412387 (12 samples in batch, 0.00% rate achieved)
	  • EB2412403 (72 samples in batch, 0.00% rate achieved)
	  • EB2412425 (13 samples in batch, 0.00% rate achieved)
	• Laboratory matrix spikes for PFAS (soil matrix) were below the expected rate of 10.00% in the following batches:
	  • EB2412425 (1 samples in batch, 0.00% rate achieved)
	  • EB2412368 (40 samples in batch, 0.00% rate achieved)
	The reason for insufficient matrix spikes and laboratory duplicates for these batches is due to the way the laboratory assigns the duplicates and matrix spikes and the availability of additional bottles. The laboratory LIMS assigns laboratory QC to samples in the analytical run; however, the runs may not allocate samples to allow for frequency compliance. However, as all other laboratory QC results met control limits this is not expected to impact data quality.

Method Blank	No method blank outliers occurred. All analytes were found to be below LOR in method blanks.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits.

Laboratory control spike (LCS) recovery	All LCS recoveries were reported within acceptable limits.
Matrix spike recovery	There were no matrix spike recovery outliers except for the following: • 0207_SD010_240412 analysed with batches EB2412378 and EB2412387 where the recovery was below the lower data quality objective (DQO) for analytes PFDS [51.3/59.0%], MeFOSA [67.1/70.0%], MeFOSE [54.8/70.0%], 10:2 FTS [42.4/70.0%]; greater than the upper DQO for PFTeDA [162/133%]; and the matrix spike could not be determined for PFOS as the background level was greater than or equal to four times the spike level. • 0207_SD011_240412 analysed with batch EB2412387 where the matrix spike could not be determined for PFOS as the background level was greater than or equal to four times the spike level. • 0207_SW056_240408 analysed in batch EB2412425 where the recovery was below the lower DQO for EtFOSA [68.3/70.0%]. • Anonymous sample EB2412093-002 analysed with batch EB2412425 where the recovery was below the lower DQO for PFUnDA [56.9/64.0%] and 10:2 FTS [61.2/70.0%]. The laboratory noted that poor matrix spike recovery was due to sample matrix interference in all cases. Where lower DQO has not been met, it is possible that these analytes have been under reported in associated analytical batches. Where the upper DQO has been exceeded, it is possible that those analytes have been over reported in associated analytical batches.
Surrogate spike recovery	Surrogate spike recoveries were within control limits.
QA/QC Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting (LOR)	LORs were reported to method specifications with the exception of: • LORs were raised due to high moisture content in sediment samples (>50% moisture). • Samples in EB2412387 required dilution due to matrix interferences. • LORs for samples 0207_SW032_240408 and 0207_SW056_240408 in batch EB2412425 were raised for analytes PFDoDA and PFUnDA due to matrix interferences. LORs were sufficiently low to assess all results against the required guidelines.
Field duplicate RPDs (refer to **Tables C2, C3**, and **C4**)	Field duplicate RPDs were reported within control limits for all primary and duplicate pairs except for samples (sample with the greater concentration is show in bold): • 0207_SD024_240403 and **0207_QC113_240403** for PFOS [71%]. • 0207_SD025_240403 and **0207_QC114_240403** for PFHpS [168%], PFOS [197%], PFDS [182%], PFOA [57%], PFNA [111%], PFDA [180%], PFUnDA [140%], PFTrDA [57%], PFTeDA [57%], FOSA [182%], 8:2 FTS [175%], 10:2 FTS [54%]. • **0207_SD107_240403** and 0207_QC115_240403 for PFOS [31%], PFUnDA [35%], PFTeDA [39%]. For the majority of RPD exceedances, the primary and duplicate results are on the same order of magnitude and the discrepancy is unlikely to have any material impact on the results. There is a substantial discrepancy between 0207_SD025_240403 and 0207_QC114_240403 for a number of analytes. This is possibly due to sample heterogeneity. The laboratory is conducting investigating the differences between these samples. As the primary sample result is generally consistent with the triplicate sample, the primary sample is considered suitable for use for interpretation of results.

Field triplicate RPDs (refer to **Tables C2, C3**, and **C4**)	Field duplicate RPDs were reported within control limits for all primary and duplicate pairs except for samples (sample with the greater concentration is show in bold): • 0207_SD024_240403 and **0207_QC213_240403** for PFOS [39%]. • **0207_SD025_240403** and 0207_QC214_240403 for PFOS [42%]. • **0207_SD107_240403** and 0207_QC215_240403 for PFOS [48%], PFTrDA [88%], and PFTeDA [82%]. • **0207_MW205_240402** and 0207_QC200_240402 for PFHpS [53%], PFOS [63%], and PFHxA [32%]. • **0207_MW229_240403** and 0207_QC202_240403 for PFHxS [42%], PFHpS [34%], and PFOS [60%]. • **0207_MW230_240403** and 0207_QC203_240403 for PFOS [73%], PFPeA [33%], PFHxA [41%], PFHpA [44%]. • **0207_MW236_240404** and 0207_QC207_240404 PFHxS [50%], PFOS [56%], PFHxA [55%], PFOA [41%]. • **0207_MW241_240404** and 0207_QC206_240404 for PFOS [54%]. • 0207_MW252_240404 and **0207_QC205_240404** for PFOS [37%]. • **0207_MW563_240404** and 0207_QC209_240404 for PFOS [39%], PFHxA [57%], PFOA [31%]. • **0207_SW066_240405** and 0207_QC212_240405 for PFOS [71%]. Where RPD exceedances occurred, the majority of primary and triplicate results were on the same order of magnitude, so the discrepancy is unlikely to have any material impact on the interpretation. Primary-triplicate pairs were not on the same order of magnitude for 0207_SD107_240403 (PFTrDA) and 0207_MW252_240404 (PFOS), though the difference between the results is small and there is agreeance between primary-duplicate pairs, therefore there is not any material impact on results.
Other	
Other observations	An unusual result was detected in MW017 at Brymaroo, which was sampled in replacement to MW007, which could not be found. This well had only been monitored on one occasion in 2011 with PFAS concentrations not detected above the LOR. The well was not sampling during the investigation phase in 2017 as it was dry (AECOM, 2018a) and has a screen between 7 and 15.5 mbgl. Monitoring well MW007 was drilled in 2017 to replace MW017 and is screened deeper, between 18.5 and 25.5 mbgl. A grab sample from MW017 was collected in April 2024 and recorded a first-time detection for sum of PFHxS and PFOS (0.37 µg/L), PFOS (0.04 µg/L) and PFOA (0.03 µg/L). The maximum concentration detected previously in groundwater from MW007 was 0.02 µg/L sum of PFHxS and PFOS in April 2021. The sum of PFHxS and PFOS concentration in MW017 in 2024 is more than an order of magnitude larger than the maximum concentration in MW007. As a grab sample was collected from MW017, it is possible that sediment may be present in the sample affecting the results. Resampling of MW017 would be required to verify the concentration of PFAS detected.

Table C1 Rinsate Blank Analytical Results

	Lab Report	EB2412403-AA	EB2412403-AA	EB2412403-AA	EB2412403-AA	EB2412403-AA	EB2412403-AA	EB2412403-AA	EB2412403-AA	EB2412403-AA
	Sample ID	0207_QC300_240402	0207_QC301_240403	0207_QC302_240404	0207_QC303_240405	0207_QC304_240408	0207_QC305_240409	0207_QC306_240410	0207_QC307_240411	0207_QC308_240412
	Sample Date	02 Apr 2024	03 Apr 2024	04 Apr 2024	05 Apr 2024	08 Apr 2024	09 Apr 2024	10 Apr 2024	11 Apr 2024	12 Apr 2024
	Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
Analyte	**Units**	**LOR**								
Perfluorobutane sulfonic acid (PFBS)	µg/L	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
Perfluorohexane sulfonate (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonate (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	µg/L	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
Perfluoropentanoic acid (PFPeA)	µg/L	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
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic Acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	µg/L	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
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
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
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
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
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
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
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
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
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	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
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

Table C2 Groundwater Duplicate and Triplicate Analytical Results

AECOM Imagine it. Delivered.

Lab Report Number	EB2412403-AA	EB2412403-AA	RPD	RN1425992	RPD	EB2412403-AA	EB2412403-AA	RPD	RN1425992	RPD	EB2412403-AA	EB2412403-AA	RPD	RN1425992	RPD	EB2412403-AA	EB2412403-AA	RPD	RN1425992	RPD
Field ID	0207_MW205_240402	0207_QC100_240402		0207_QC200_240402		0207_MW174_240403	0207_QC101_240403		0207_QC201_240403		0207_MW229_240403	0207_QC102_240403		0207_QC202_240403		0207_MW230_240403	0207_QC103_240403		0207_QC203_240403	
Sampled Date	02 Apr 2024	02 Apr 2024		02 Apr 2024		03 Apr 2024	03 Apr 2024		03 Apr 2024		03 Apr 2024	03 Apr 2024		03 Apr 2024		03 Apr 2024	03 Apr 2024		03 Apr 2024	
Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Chemical Name	**Units**	**EQL**																		
PFBS	µg/L	0.02 : 0.01 (Interlab)	1.44	1.29	11	1.6	11	<0.02	<0.02	0	<0.01	0	0.55	0.47	16	0.52	6	0.29	0.26	11	0.28	4
PFPeS	µg/L	0.02 : 0.01 (Interlab)	1.38	1.28	8	1.3	6	<0.02	<0.02	0	<0.01	0	0.64	0.58	10	0.59	8	0.31	0.33	6	0.26	18
PFHxS	µg/L	0.01	6.74	6.60	2	5.2	26	0.01	0.01	0	0.016	46	8.08	6.76	18	5.3	**42**	1.92	2.11	9	1.7	12
PFHpS	µg/L	0.02 : 0.01 (Interlab)	0.19	0.18	5	0.11	**53**	<0.02	<0.02	0	<0.01	0	0.59	0.58	2	0.42	**34**	0.14	0.14	0	0.078	57
PFOS	µg/L	0.01 : 0.02 (Interlab)	5.56	4.98	11	2.9	**63**	0.02	0.02	0	<0.02	0	31.6	27.3	15	17	**60**	3.42	2.73	22	1.6	**73**
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	0.3	0.3	0	0.35	15	<0.1	<0.1	0	<0.05	0	0.1	0.1	0	0.14	33	1.9	1.8	5	1.9	0
PFPeA	µg/L	0.02	0.60	0.66	10	0.53	12	<0.02	<0.02	0	0.1	133	0.26	0.27	4	0.24	8	6.57	6.76	3	4.7	**33**
PFHxA	µg/L	0.02 : 0.01 (Interlab)	2.22	2.46	10	1.6	**32**	<0.02	<0.02	0	0.039	64	1.56	1.72	10	1.4	11	4.08	4.44	8	2.7	**41**
PFHpA	µg/L	0.02 : 0.01 (Interlab)	0.22	0.23	4	0.18	20	<0.02	<0.02	0	0.027	30	0.14	0.14	0	0.12	15	2.51	2.47	2	1.6	**44**
PFOA	µg/L	0.01	0.17	0.18	6	0.13	27	<0.01	<0.01	0	<0.01	0	0.51	0.52	2	0.4	24	1.54	1.51	2	1.4	10
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.34	0.31	9	0.29	16
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.011	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0
PFTrDA	µg/L	0.02	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
EtFOSE	µg/L	0.05	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	0.72	0.68	6	0.56	25
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	0.06	18	0.031	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.9	<0.83	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	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

Table C2 Groundwater Duplicate and Triplicate Analytical Results

		EB2412403-AA	EB2412403-AA		RN1425992		EB2412403-AA	EB2412403-AA		RN1425992		EB2412403-AA	EB2412403-AA		RN1425992		EB2412403-AA	EB2412403-AA		RN1425992		EB2412403-AA
		0207_MW233_240403	0207_QC104_240403	RPD	0207_QC204_240403	RPD	0207_MW236_240404	0207_QC107_240404	RPD	0207_QC207_240404	RPD	0207_MW241_240404	0207_QC106_240404	RPD	0207_QC206_240404	RPD	0207_MW249_240404	0207_QC108_240404	RPD	0207_QC208_240404	RPD	0207_MW252_240404
		03 Apr 2024	03 Apr 2024		03 Apr 2024		04 Apr 2024	04 Apr 2024		04 Apr 2024		04 Apr 2024	04 Apr 2024		04 Apr 2024		04 Apr 2024	04 Apr 2024		04 Apr 2024		04 Apr 2024
		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary
Chemical Name	**Units**																					
PFBS	µg/L	0.08	0.08	0	0.096	18	1.64	1.46	12	1.7	4	0.08	0.08	0	0.086	7	0.68	0.70	3	0.84	21	0.79
PFPeS	µg/L	0.06	0.08	29	0.066	10	1.15	1.21	5	1.1	4	0.09	0.09	0	0.094	4	0.76	0.92	19	0.85	11	0.74
PFHxS	µg/L	0.48	0.59	21	0.5	4	4.18	4.51	8	2.5	**50**	0.79	0.89	12	0.8	1	3.33	4.13	21	2.6	25	3.33
PFHpS	µg/L	<0.02	<0.02	0	<0.01	0	0.13	0.11	17	0.045	97	0.08	0.10	22	0.048	50	0.05	0.05	0	0.025	67	0.20
PFOS	µg/L	0.19	0.17	11	0.16	17	0.84	0.68	21	0.47	**56**	4.19	4.08	3	2.4	**54**	0.19	0.17	11	0.13	38	11.3
PFDS	µg/L	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFBA	µg/L	<0.1	<0.1	0	<0.05	0	0.6	0.6	0	0.65	8	<0.1	<0.1	0	0.051	0	0.2	0.2	0	0.26	26	0.4
PFPeA	µg/L	0.03	0.03	0	0.024	22	0.65	0.70	7	0.57	13	0.04	0.05	22	0.037	8	0.44	0.47	7	0.36	20	0.75
PFHxA	µg/L	0.09	0.09	0	0.065	32	2.81	2.85	1	1.6	**55**	0.13	0.14	7	0.11	17	1.39	1.54	10	1.2	15	1.18
PFHpA	µg/L	<0.02	<0.02	0	<0.01	0	0.28	0.25	11	0.2	33	0.03	0.03	0	0.022	31	0.17	0.19	11	0.15	13	0.33
PFOA	µg/L	0.03	0.03	0	0.023	26	0.38	0.34	11	0.25	**41**	0.09	0.09	0	0.066	31	0.11	0.12	9	0.079	33	0.45
PFNA	µg/L	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.03
PFDA	µg/L	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFUnDA	µg/L	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFDoDA	µg/L	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02
PFTrDA	µg/L	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05
PFTeDA	µg/L	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
FOSA	µg/L	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05
MeFOSA	µg/L	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05
EtFOSA	µg/L	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05
MeFOSE	µg/L	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05
EtFOSE	µg/L	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
MFOSAA	µg/L	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
EtFOSAA	µg/L	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
4:2 FTS	µg/L	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	0.051	2	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
6:2 FtS	µg/L	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
8:2 FTS	µg/L	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
10:2 FTS	µg/L	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05

*RPDs have only been consi
**High RPDs are in bold (Acc
***Interlab Duplicates are ma

Table C2 Groundwater Duplicate and Triplicate Analytical Results

	EB2412403-AA	RPD	RN1425992	RPD	EB2412403-AA	EB2412403-AA	RPD	RN1425992	RPD
	0207_QC105_240404		0207_QC205_240404		0207_MW563_240404	0207_QC109_240404		0207_QC209_240404	
	04 Apr 2024		04 Apr 2024		04 Apr 2024	04 Apr 2024		04 Apr 2024	
	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Chemical Name	**Units**								
PFBS	µg/L	0.71	11	0.84	6	2.26	2.16	5	1.9	17
PFPeS	µg/L	0.86	15	0.77	4	2.57	2.57	0	2.1	20
PFHxS	µg/L	4.43	28	3.1	7	15.9	16.4	3	14	13
PFHpS	µg/L	0.25	22	0.16	22	0.25	0.24	4	0.19	27
PFOS	µg/L	11.5	2	7.8	**37**	0.71	0.62	14	0.48	**39**
PFDS	µg/L	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFBA	µg/L	0.3	29	0.41	2	0.6	0.6	0	0.64	6
PFPeA	µg/L	0.77	3	0.67	11	1.02	1.00	2	0.88	15
PFHxA	µg/L	1.37	15	1.1	7	4.15	4.06	2	2.3	**57**
PFHpA	µg/L	0.35	6	0.31	6	0.72	0.66	9	0.57	23
PFOA	µg/L	0.45	0	0.41	9	0.82	0.72	13	0.6	**31**
PFNA	µg/L	0.03	0	0.023	26	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFUnDA	µg/L	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0
PFTrDA	µg/L	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
PFTeDA	µg/L	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
FOSA	µg/L	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
EtFOSA	µg/L	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
MeFOSE	µg/L	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
EtFOSE	µg/L	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
MFOSAA	µg/L	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
EtFOSAA	µg/L	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 FTS	µg/L	<0.05	0	<0.01	0	<0.05	<0.05	0	0.035	0
6:2 FtS	µg/L	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
8:2 FTS	µg/L	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
10:2 FTS	µg/L	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0

*RPDs have only been consi
**High RPDs are in bold (Acc
***Interlab Duplicates are ma

Table C3 Surface Water Duplicate and Triplicate Analytical Results

AECOM Imagine it. Delivered.

Lab Report Number	EB2412387	EB2412387	RPD	RN1425992	RPD	EB2412387	EB2412387	RPD	RN1425992	RPD	EB2412387	EB2412387	RPD	RN1425992	RPD
Field ID	0207_SW024_240403	0207_QC113_240403		0207_QC213_240403		0207_SW065_240405	0207_QC111_240405		0207_QC211_240405		0207_SW066_240405	0207_QC112_240405		0207_QC212_240405	
Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Sampled Date	03 Apr 2024	03 Apr 2024		03 Apr 2024		05 Apr 2024	05 Apr 2024		05 Apr 2024		05 Apr 2024	05 Apr 2024		05 Apr 2024	
Chemical Name	**Units**	**EQL**													
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.06	0.07	15	0.058	3	0.06	0.05	18	0.059	2
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.031	43	0.03	0.03	0	0.048	46
PFHxS	µg/L	0.01	0.05	0.06	18	0.065	26	0.18	0.16	12	0.17	6	0.35	0.38	8	0.39	11
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.016	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.55	0.56	2	0.52	6	0.43	0.41	5	0.4	7	0.8	0.79	1	0.38	**71**
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.10	<0.10	0	<0.05	0	<0.10	<0.10	0	<0.05	0	<0.10	<0.10	0	<0.05	0
PFPeA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	0.03	0.03	0	0.041	31
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.04	0.03	29	0.032	22	0.07	0.06	15	0.072	3
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.03	0.02	40	0.013	79
PFOA	µg/L	0.01	<0.02	<0.02	0	<0.01	0	0.01	0.01	0	<0.01	0	0.03	0.03	0	0.025	18
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	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

Table C4 Sediment Duplicate and Triplicate Analytical Results

AECOM Imagine it. Delivered.

Lab Report Number	EB2412387	EB2412387	RPD	RN1426141	RPD	EB2412387	EB2412387	RPD	RN1426141	RPD	EB2412387	EB2412387	RPD	RN1426141	RPD
Field ID	0207_SD024_240403	0207_QC113_240403		0207_QC213_240403		0207_SD025_240403	0207_QC114_240403		0207_QC214_240403		0207_SD107_240403	0207_QC115_240403		0207_QC215_240403	
Date	03 Apr 2024	03 Apr 2024		03 Apr 2024		03 Apr 2024	03 Apr 2024		03 Apr 2024		03 Apr 2024	03 Apr 2024		03 Apr 2024	
Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Chemical Name	**Units**	**EQL**													
PFBS	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0003	<0.0002	40	<0.001	0
PFPeS	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFHxS	mg/kg	0.0002	0.0003	0.0018	143	<0.001	0	<0.0002	0.0002	0	<0.001	0	0.0031	0.0026	18	0.0028	10
PFHpS	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	<0.0002	0.0023	**168**	<0.001	0	0.0005	0.0003	50	<0.001	0
PFOS	mg/kg	0.0002	0.0196	0.0411	**71**	0.029	**39**	0.0098	1.24	**197**	0.0064	**42**	0.0425	0.0311	**31**	0.026	**48**
PFDS	mg/kg	0.0002	0.0004	0.0006	40	<0.001	0	0.0009	0.019	**182**	<0.001	0	0.0011	0.0006	59	<0.001	10
PFBA	mg/kg	0.001	<0.001	<0.001	0	<0.002	0	<0.001	0.001	0	<0.002	0	<0.001	<0.001	0	<0.002	0
PFPeA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.002	0	0.0023	0.0028	20	<0.002	14	0.0006	0.0004	40	<0.002	0
PFHxA	mg/kg	0.0002	<0.0002	0.0003	40	<0.001	0	0.0026	0.0027	4	0.0019	31	0.0005	0.0004	22	<0.001	0
PFHpA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	0.0044	0.0055	22	0.004	10	0.0004	0.0004	0	<0.001	0
PFOA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	0.0082	0.0148	**57**	0.0083	1	0.001	0.0009	11	<0.001	0
PFNA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	0.0121	0.0421	**111**	0.012	1	0.0017	0.0015	12	0.0018	6
PFDA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	0.0386	0.744	**180**	0.034	13	0.0051	0.0052	2	0.006	16
PFUnDA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.002	0	0.139	0.791	**140**	0.15	8	0.011	0.0077	**35**	0.0085	26
PFTrDA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.002	0	0.312	0.558	**57**	0.33	6	0.011	0.0074	**39**	0.0043	**88**
PFTeDA	mg/kg	0.0005	<0.0005	<0.0005	0	<0.002	0	0.27	0.483	**57**	0.27	0	0.0067	0.0052	25	0.0028	**82**
FOSA	mg/kg	0.0002	<0.0002	0.0002	0	<0.001	0	<0.0002	0.0042	**182**	<0.001	0	0.0003	0.0002	40	<0.001	0
MeFOSA	mg/kg	0.0005	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
EtFOSA	mg/kg	0.0005	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
MeFOSE	mg/kg	0.0005	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
EtFOSE	mg/kg	0.0005	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
MFOSAA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
EtFOSAA	mg/kg	0.0002	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
4:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
6:2 FtS	mg/kg	0.0005	<0.0005	<0.0005	0	<0.001	0	0.004	0.0044	10	0.0061	42	<0.0005	<0.0005	0	<0.001	0
8:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	0	<0.001	0	0.146	2.2	**175**	0.12	20	<0.0005	0.0013	89	<0.001	0
10:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	0	<0.002	0	0.0257	0.0448	**54**	0.034	28	<0.0005	<0.0005	0	<0.002	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

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Environmental Division Brisbane
Work Order Reference
EB2412269

Telephone + 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW134_240410	10.04.24		X				X		2 x 20 ml	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 & invoic [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:	
Received by:	Signed:	Date: 12/4 15:45	
Relinquished by:	Signed:	Date:	
Received by:	Signed:	Date:	

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manage [redacted]

Analysis Request

Environmental Division
Brisbane
Work Order Reference
EB2412273

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW056_240409	09.04.24		X				X		2 x 20 ml	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 [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date: 12/04 15:45	Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manage [redacted]

Analysis Request

Environmental Division Brisbane

Work Order Reference

EB2412274

Telephone : 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW149_240409	09.04.24		X				X		2 x 20 ml	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 & invoic [redacted]

Lab Report N Esky ID

Relinquished by: [redacted] Signed: [redacted] Date:

Received by: Signed: Date: 12/4 15:45

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Environmental Division
Brisbane
Work Order Reference
EB2412275

Telephone : 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW151_240409	09.04.24		X				X		2 x 20 ml	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 [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date:

Received by: Signed: Date: 12/04

15:45

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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:)	

6. Report Format: ESdat

7. Project Manager [redacted]

Analysis Request

Environmental Division Brisbane

Work Order Reference

EB2412277

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW290_240409	09.04.24		X				X		2 x 20 ml	X	
2	0207_MW291_240409	09.04.24		X				X		2 x 20 ml	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 & invoi [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed [redacted]	Date: 12/04 15:45	Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Environmental Division
Brisbane
Work Order Reference
EB2412279

Telephone : + 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW139_240416	10.04.24		X				X		2 x 20 ml	X	

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the file name the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Sign: [redacted] Date:

Received by: Sign: Date: 12/04 15:45

Relinquished by: Signed: Date:

Received by: Signed: Date:

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Chain of Custody

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AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manage [redacted]

Analysis Request

Environmental Division
Brisbane
Work Order Reference
EB2412280

Telephone + 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filtered	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
	0207_MW038_240408	08.04.24		X				X		2 x 20 ml	X	

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that [redacted] NAME

Temp. received: °C

Report & invoi [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 12/04 15:45	Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted]
Mobile Number:
Project Name: QLD_0207_PFASOMP_24
AECOM Project #: 60612563 2.1
Purchase Order No: 60612563 2.1

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat
7. Project Manager [redacted]

Environmental Division Brisbane
Work Order Reference
EB2412281

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD
1	0207_MW019_240409	09.04.24		X				X		2 x 20 ml	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: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 12/04 15:45	Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manage [redacted]

Analysis Request

Environmental Division
Brisbane
Work Order Reference
EB2412283

Telephone : 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW288_2404 10	10.04.24		X				X		2 x 20 ml	X	
	~~0207_MW289_2404~~			X				X		2 x 20 ml	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: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed: [redacted]	Date: 12/04 15:45	Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manag [redacted]

Analysis Request

Environmental Division Brisbane

Work Order Reference

EB2412284

Telephone : + 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW021_240409	09.04.24		X				X		2 x 20 ml	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: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed	Date: 12/04 15:45	Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled B [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manage [redacted]

Analysis Request

Environmental Division Brisbane
Work Order Reference
EB2412285

Telephone : 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW147_240409	09.04.24		X				X		2 x 20 ml	X	

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the file name the PROJECT NAME

Temp. received: °C

Report & invoice [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date:

Received by: Signed: [redacted] Date: 12/04 15:45

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM

Chain of Custody

COC Page 1 of 4

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled B [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format	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: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Environmental Division Brisbane
Work Order Reference
EB2412368

Telephone : + 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	HOLD
1	1435_MW001_2404OS	05.04.24		X				X		2 x 20 ml	X	
2	1435_MW002_2404OS	05.04.24		X				X		2 x 20 ml	X	
3	1435_MW003_2404OU	04.04.24		X				X		2 x 20 ml	X	
4	1435_MW004_2404OU	04.04.24		X				X		2 x 20 ml	X	
5	1435_MW005_2404OU	04.04.24		X				X		2 x 20 ml	X	
6	1435_MW006_2404OU	04.04.24		X				X		2 x 20 ml	X	
	~~1435_MW007_2404~~			X				X		2 x 20 ml	X	
7	1435_MW008_2404OS	05.04.24		X				X		2 x 20 ml	X	
8	1435_MW009_2404OU	04.04.24		X				X		2 x 20 ml	X	
9	1435_MW010_2404OU	04.04.24		X				X		2 x 20 ml	X	
10	1435_MW011_2404OU	04.04.24		X				X		2 x 20 ml	X	
11	1435_MW012_2404OS	05.04.24		X				X		2 x 20 ml	X	
12	1435_MW013_2404OS	05.04.24		X				X		2 x 20 ml	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 [redacted]

Lab Report N | Esky ID

Relinquished by: [redacted] Sig [redacted] Date:

Relinquished by: Signed: Date:

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Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manager [redacted]

Environmental Division Brisbane
Work Order Reference
EB2412372

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: fil'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	HOLD
1	0207_MW292_2404[redacted]	09.04.24		X				X		2 x 20 ml	X	
2	0207_MW293_2404[redacted]	09.04.24		X				X		2 x 20 ml	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 & invoic [redacted]

Lab Report N | Esky ID

Relinquished by: [redacted]	Sign: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Sign: [redacted]	Date:	Received by:	Signed:	Date:

12/4 1545

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Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile Number:

Project Name: QLD_0207_PFASOMP_24
AECOM Project #: 60612563 2.1
Purchase Order No: 60612563 2.1

Environmental Division Brisbane
Work Order Reference
EB2412376

Telephone : + 61-7-3243 7222

Specifications: Please report in ESdat format	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: _____)	

6. Report Format: ESdat
7. Project Manag [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	Analysis: HOLD
1	0207_MW113_2404 10	10.04.24		X				X		2 x 20 ml	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 & inv [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed	Date:	Received by:	Signed:	Date:

12/4 1545

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Environmental Division Brisbane
Work Order Reference
EB2412378

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	Analysis: HOLD
1	0207_MW003_240408	08.04.24		X				X		2 x 20 ml	X	
2	0207_MW283_240411	11.04.24		X				X		2 x 20 ml	X	
3	0207_SW059_240408	08.04.24		X				X		2 x 20 ml	X	
4	0207_SD045_240408	08.04.24	X					X		1 x 200 ml	X	

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that**

Temp. received: °C

Report & invoi [redacted]

Lab Report N: Esky ID:

Relinquished [redacted] Sig[redacted] Date:
Received by: Signed: Date:

Relinquished by: Signed: Date:
Received by: Signed: Date:

12/4 1545

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Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By [redacted]

Project Name: QLD_0207_PFASOMP_24

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Environmental Division Brisbane

Work Order Reference

EB2412382

Telephone : + 61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0207_MW114_2404|0	10.04.24		X				X		2 x 20 ml	X	
2	0207_MW118_2404|0			X				X		2 x 20 ml	X	
3	0207_MW122_2404|0			X				X		2 x 20 ml	X	
4	0207_MW157_2404|0			X				X		2 x 20 ml	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 & invoi [redacted]

Lab Report N | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date:

Received by: [redacted] Signed: [redacted] Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

12/4 1545

AECOM

Chain of Custody

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AECOM Australia Pty Ltd
[redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP_23 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manage [redacted]

Environmental Division Brisbane
Work Order Reference
EB2412387

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	HOLD
1	0207_SW004_2404 12	12.04.24		X				X		2 x 20 ml	X	
2	0207_SW009_2404 12	12.04.24		X				X		2 x 20 ml	X	
3	0207_SW010_2404 12	12.04.24		X				X		2 x 20 ml	X	
4	0207_SW011_2404 12	12.04.24		X				X		2 x 20 ml	X	
5	0207_SW012_2404 12	12.04.24		X				X		2 x 20 ml	X	
6	0207_SW013_2404 12	12.04.24		X				X		2 x 20 ml	X	
~~7~~	~~0207_SW019_2404~~			X				X		2 x 20 ml	X	
~~8~~	~~0207_SW021_2404~~			X				X		2 x 20 ml	X	
7	0207_SW024_2404 03	03.04.24		X				X		2 x 20 ml	X	
8	0207_SW025_2404 12	12.04.24		X				X		2 x 20 ml	X	
9	0207_SW026_2404 12	12.04.24		X				X		2 x 20 ml	X	
10	0207_SW027_2404 12	12.04.24		X				X		2 x 20 ml	X	
11	0207_SW028_2404 12	12.04.24		X				X		2 x 20 ml	X	

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that** Temp. received: °C **Report & invoic** [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signe	Date:	Relinquished by:	Signed:	Date:
Received by:	Signe [redacted]	Date:	Received by:	Signed:	Date:

12/4 1545

AECOM

Chain of Custody

COC Page 2 of 4

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_23 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
12	0207_SW040_2404 12:00	12.04.24		X				X		2 x 20 ml	X		
13	0207_SW043_2404 12	12.04.24		X				X		2 x 20 ml	X		
~~—~~	~~0207_SW063_2404~~			~~X~~				~~X~~		~~2 x 20 ml~~	~~X~~		
14	0207_SW065_2404 05 [redacted]	05.04.24		X				X		2 x 20 ml	X		
15	0207_SW066_2404 05	05.04.24		X				X		2 x 20 ml	X		
16	0207_QC111_2404 05	05.04.24		X				X		2 x 20 ml	X		
17	0207_QC211_2404 05	05.04.24		X				X		2 x 20 ml	X		Send to NMI
18	0207_QC112_2404 05	05.04.24		X				X		2 x 20 ml	X		
19	0207_QC212_2404 05	05.04.24		X				X		2 x 20 ml	X		Send to NMI
20	0207_QC113_2404 03	03.04.24		X				X		2x12.5 ~~2 x 20 ml~~	X		
21	0207_QC213_2404 03	03.04.24		X				X		2x12.5 ~~2 x 20 ml~~	X		Send to NMI

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the file name is PROJECT NAME**

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Report & invoic [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: Date:

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Relinquished by: Signed: Date:

Received by: Signed: Date:

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COC Page 3 of 4

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[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Project Name: QLD_0207_PFASOMP_23

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
22	0207_SD007_2404 12	12.04.24	X	*				X		2 x 20 ml	X		
23	0207_SD010_2404 12 SNR	12.04.24		*				X		2 x 20 ml	X		
24	0207_SD011_2404 12	12.04.24		*				X		2 x 20 ml	X		
25	0207_SD013_2404 12	12.04.24		*				X		2 x 20 ml	X		
26	0207_SD015_2404 12	12.04.24		*				X		2 x 20 ml	X		
27	0207_SD016_2404 12	12.04.24		*				X		2 x 20 ml	X		
28	0207_SD022_2404 05	05.04.24		*				X		2 x 20 ml	X		
29	0207_SD024_2404 03	03.04.24		*				X		2 x 20 ml	X		
30	0207_SD025_2404 03	03.04.24		*				X		2 x 20 ml	X		
31	0207_SD036_2404 12	12.04.24		*				X		2 x 20 ml	X		
32	0207_SD037_2404 12	12.04.24		*				X		2 x 20 ml	X		
33	0207_SD038_2404 12	12.04.24		*				X		2 x 20 ml	X		
34	0207_SD040_2404 12	12.04.24		*				X		2 x 20 ml	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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Lab Report No | Esky ID

Relinquished by: [redacted]	Signed:	Date:	Relinquished by:	Signed:	Date:
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[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format	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: _____)	

6. Report Format: ESdat 7. Project Manager [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
35	0207_SD070_2404 12	12.04.24	X					X		2 x 20 ml	X		
36	0207_SD102_2404 12	12.04.24	X					X		2 x 20 ml	X		
37	0207_SD105_2404 12	12.04.24	X					X		2 x 20 ml	X		
38	0207_SD106_2404 05	05.04.24	X					X		2 x 20 ml	X		
39	0207_SD107_2404 03	03.04.24	X					X		2 x 20 ml	X		
40	0207_QC113_2404 03	03.04.24	X					X		~~2 x 20 ml~~	X		
41	0207_QC213_2404 03	03.04.24	X					X		~~2 x 20 ml~~	X		Send to NMI
42	0207_QC114_2404 03	03.04.24	X					X		~~2 x 20 ml~~	X		
43	0207_QC214_2404 03	03.04.24	X					X		~~2 x 20 ml~~	X		Send to NMI
44	0207_QC115_2404 03	03.04.24	X					X		~~2 x 20 ml~~	X		
45	0207_QC215_2404 03	03.04.24	X					X		~~2 x 20 ml~~	X		Send to NMI

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: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by: Signed: Date:
Received by: [redacted]	Signed: [redacted]	Date:	Received by: Signed: Date:

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COC Page 1 of 6

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Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Environmental Division Brisbane
Work Order Reference
EB2412403

Telephone : + 61-7-3243 7222

Specifications: Please report in ESdat format	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: _____)	
6. Report Format: ESdat	7. Project Manage [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	HOLD
1	0207_MW167_240402 ✓	02.04.24		X				X		2 x 20 ml	X	
2	0207_MW172_240402 ✓	02.04.24		X				X		2 x 20 ml	X	
3	0207_MW173_240402 ✓	02.04.24		X				X		2 x 20 ml	X	
4	0207_MW174_240403 ✓	03.04.24		X				X		2 x 20 ml	X	
5	0207_MW178_240403 ✓	03.04.24		X				X		2 x 20 ml	X	
6	0207_MW179_240403 ✓	03.04.24		X				X		2 x 20 ml	X	
7	0207_MW187_240403 ✓	03.04.24		X				X		2 x 20 ml	X	
8	0207_MW189_240403 ✓	03.04.24		X				X		2 x 20 ml	X	
9	0207_MW193_240402 ✓	02.04.24		X				X		2 x 20 ml	X	
10	0207_MW198_240402 ✓	02.04.24		X				X		2 x 20 ml	X	
11	0207_MW201_240402 ✓			X				X		2 x 20 ml	X	
12	0207_MW202_240402 ✓			X				X		2 x 20 ml	X	
13	0207_MW203_240402 ✓			X				X		2 x 20 ml	X	
14	0207_MW204_240402 ✓			X				X		2 x 20 ml	X	

Comments: [redacted] Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the Temp. received: °C Report & invoic [redacted] Lab Report No: Esky ID:

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Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0207_PFASOMP_23 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manage [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
15	0207_MW205_240402 ✓	02.04.24		X				X		2 x 20 ml	X		
16	0207_MW207_240402 ✓	↓		X				X		2 x 20 ml	X		
17	0207_MW221_240402 ✓	↓		X				X		2 x 20 ml	X		
18	0207_MW222_240403 ✓	03.04.24		X				X		2 x 20 ml	X		
19	0207_MW223_240403 ✓	04.04.24		X				X		2 x 20 ml	X		
20	0207_MW229_240403 ✓	03.04.24		X				X		2 x 20 ml	X		
21	0207_MW230_240403 ✓	03.04.24		X				X		2 x 20 ml	X		
22	0207_MW232_240403 ✓	03.04.24		X				X		2 x 20 ml	X		
23	0207_MW233_240403 ✓	03.04.24		X				X		2 x 20 ml	X		
24	0207_MW235_240404 ✓	04.04.24		X				X		2 x 20 ml	X		
25	0207_MW236_240404 ✓	04.04.24		X				X		2 x 20 ml	X		
26	0207_MW241_240404 ✓	04.04.24		X				X		2 x 20 ml	X		
27	0207_MW242_240405 ✓	05.04.24		X				X		2 x 20 ml	X		
28	0207_MW245_240405 ✓	05.04.24		X				X		2 x 20 ml	X		

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Report & invoice [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date:

Received by: [redacted] Signed: [redacted] Date:

Relinquished by: Signed: Date:

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Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted]

Project Name: QLD_0207_PFASOMP_23

AECOM Project #: 60612563 2.1

Purchase Order No: 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
29	0207_MW249_2404 04 ✓	04.04.24		X				X		2 x 20 ml	X		
30	0207_MW252_2404 04 ✓	04.04.24		X				X		2 x 20 ml	X		
31	0207_MW255_2404 10 ✓	10.04.24		X				X		2 x 20 ml	X		
32	0207_MW257_2404 10 ✓	10.04.24		X				X		2 x 20 ml	X		
33	0207_MW262_2404 11 ✓	11.04.24		X				X		2 x 20 ml	X		
34	0207_MW265_2404 11 ✓	11.04.24		X				X		2 x 20 ml	X		
35	0207_MW266_2404 11 ✓	11.04.24		X				X		2 x 20 ml	X		
36	0207_MW273_2404 08 ✓	08.04.24		X				X		2 x 20 ml	X		
37	0207_MW274_2404 11 ✓	11.04.24		X				X		2 x 20 ml	X		
38	0207_MW275_2404 11 ✓	11.04.24		X				X		2 x 20 ml	X		
39	0207_MW278_2404 11 ✓	11.04.24		X				X		2 x 20 ml	X		
	~~0207_MW279_2404~~			X				X		2 x 20 ml	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that [redacted]

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Report & in [redacted]

Lab Report N: Esky ID:

Relinquished by: [redacted] Signe [redacted] Date:

Received by: Signe Date:

Signed: Date:

Received by: Signed: Date:

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COC Page 4 of 6

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_23 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
40	0207_MW280_2404 11	11.04.24		X				X		2 x 20 ml	X		
41	0207_MW281_2404 11	11.04.24		X				X		2 x 20 ml	X		
42	0207_MW282_2404 11	11.04.24		X				X		2 x 20 ml	X		
43	0207_MW285_2404 11	11.04.24		X				X		2 x 20 ml	X		
44	0207_MW272_2404 08	08.04.24		X				X		2 x 20 ml	X		
45	0207_MW276_2404 11	11.04.24		X				X		2 x 20 ml	X		
46	0207_MW299_2404 02	02.04.24		X				X		2 x 20 ml	X		
47	0207_MW300_2404 02	02.04.24		X				X		2 x 20 ml	X		
48	0207_MW562_2404 04	04.04.24		X				X		2 x 20 ml	X		
49	0207_MW563_2404 04	04.04.24		X				X		2 x 20 ml	X		
50	0207_QC100_2404 03	03.04.24		X				X		2 x 20 ml	X		
51	0207_QC200_2404 03	03.04.24		X				X		2 x 20 ml	X		Send to NMI

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Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date:

Received by: [redacted] Signed: [redacted] Date:

Relinquished by: Signed: Date:

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COC Page 5 of 6

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_23 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number: --

Specifications: Please report in ESdat format — 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: _____)
6. Report Format: ESdat
7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
52	0207_QC101_240402	02.04.24		X				X		2 x 20 ml	X		
53	0207_QC201_240402	02.04.24		X				X		2 x 20 ml	X		Send to NMI
54	0207_QC102_240403	03.04.24		X				X		2 x 20 ml	X		
55	0207_QC202_240403	03.04.24		X				X		2 x 20 ml	X		Send to NMI
56	0207_QC103_240403	03.04.24		X				X		2 x 20 ml	X		
57	0207_QC203_240403	03.04.24		X				X		2 x 20 ml	X		Send to NMI
58	0207_QC104_240403	03.04.24		X				X		2 x 20 ml	X		
59	0207_QC204_240403	03.04.24		X				X		2 x 20 ml	X		Send to NMI
60	0207_QC105_240404	04.04.24		X				X		2 x 20 ml	X		
61	0207_QC205_240404	04.04.24		X				X		2 x 20 ml	X		Send to NMI
62	0207_QC106_240404	04.04.24		X				X		2 x 20 ml	X		
63	0207_QC206_240404	04.04.24		X				X		2 x 20 ml	X		Send to NMI

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 & invo [redacted]

Lab Report No | Esky ID

Relinquished	[redacted]	S [redacted]	Date:	Relinquished by:	Signed: Date:
Received by:		S	Date:	Received by:	Signed: Date:

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COC Page 6 of 6

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_23 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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:)	

6. Report Format: ESdat

7. Project Manager: James Peachey

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)									HOLD	Notes
64	0207_QC107_240404 ✓	04.04.24		X				X		4 x 20 ml	X										
65	0207_QC207_240404 ✓	04.04.24		X				X		4 x 20 ml	X										FWD to NMI SYD PLS
66	0207_QC108_240404 ✓	04.04.24		X				X		2 ~~4~~ x 20 ml	X										
67	0207_QC208_240404 ✓	04.04.24		X				X		2 ~~4~~ x 20 ml	X										FWD to NMI SYD PLS
68	0207_QC109_240404 ✓	04.04.24		X				X		2 ~~4~~ x 20 ml	X										
69	0207_QC209_240404 ✓	04.04.24		X				X		2 ~~4~~ x 20 ml	X										FWD NMI SYD PLS
70	0207_QC300_240402 ✓	02.04.24		X				X		2 x 20 ml	X										
71	0207_QC301_240403 ✓	03.04.24		X				X		2 x 20 ml	X										
72	0207_QC302_240404 ✓	04.04.24		X				X		2 x 20 ml	X										
73	0207_QC303_240405 ✓	05.04.24		X				X		2 x 20 ml	X										
74	0207_QC304_240408 ✓	08.04.24		X				X		2 x 20 ml	X										
75	0207_QC305_240409 ✓	09.04.24		X				X		2 x 20 ml	X										
76	0207_QC306_240410 ✓	10.04.24		X				X		2 x 20 ml	X										
77	0207_QC307_240411 ✓	11.04.24		X				X		2 x 20 ml	X										
78	0207_QC308_240412 ✓	12.04.22		X				X		2 x 20 ml	X										
	~~0207_QC309_2404~~			X				X		2 x 20 ml	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 [redacted]

Lab Report No: Esky ID:

Relinquished [redacted] Signed: Date:

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Relinquished by: Signed: Date:

Received by: Signed: Date:

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Chain of Custody

COC Page 1 of 1

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[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By [redacted] **Project Name:** QLD_0207_PFASOMP_24 **AECOM Project #:** 60612563 2.1 **Purchase Order No:** 60612563 2.1

Mobile Number:

Specifications: Please report in ESdat format

	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: _____)	

6. Report Format: ESdat 7. Project Manage [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
SNL	0207_MW267_240408	08.04.24		X				X		2 x 20 ml	X		
SNL	0207_MW268_240408	↓		X				X		2 x 20 ml	X		
SNL	0207_MW269_240408	↓		X				X		2 x 20 ml	X		
~~—~~	~~0207_MW270_2404~~			~~X~~				~~X~~		~~2 x 20 ml~~	~~X~~		
SNL	0207_MW271_240410	10.04.24		X				X		2 x 20 ml	X		
SNL	0207_MW294_240408	08.04.24		X				X		2 x 20 ml	X		
SNL	0207_MW295_240408	↓		X				X		2 x 20 ml	X		
SNL	0207_SW032_240408	↓		X				X		2 x 20 ml	X		
SNL	0207_SD032_240408	↓	X					X		1 x 200 ml	X		
SNL	0207_SW056_240408	↓		X				X		2 x 20 ml	X		
1	0207_SD017_240410 ✓	10.04.24	X					X		1 x 200 ml	X		
SNL	0207_SW057_240410	10.04.24		X				X		2 x 20 ml	X		
2	0207_SD018_240408 ✓	08.04.24	X					X			X		

Environmental Division Brisbane
Work Order Reference
EB2412425

Telephone : + 61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that [redacted] T NAME

Temp. received: °C

Report & invoic [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:	R	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date:

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2412277**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412277-001	09-Apr-2024 00:00	0207_MW290_240409	✓
EB2412277-002	09-Apr-2024 00:00	0207_MW291_240409	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412277**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:23
Sampler	[redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- 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	0207_MW290_240409	0207_MW291_240409	----	----	----
				Sampling date / time	09-Apr-2024 00:00	09-Apr-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2412277-001	EB2412277-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.05**	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.03**	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.13**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW290_240409	0207_MW291_240409	----	----	----
				Sampling date / time	09-Apr-2024 00:00	09-Apr-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2412277-001	EB2412277-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.23**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.15**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.20**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**90.5**	**93.8**	----	----	----
13C8-PFOA	----	0.02	%		**98.5**	**98.8**	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412277**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412277**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	[redacted]	No. of samples received	: 2
Order number	: 60612563 2.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)								
0207_MW290_240409,	0207_MW291_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW290_240409,	0207_MW291_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0207_MW290_240409,	0207_MW291_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW290_240409,	0207_MW291_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0207_MW290_240409,	0207_MW291_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-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	20	**0.00**	**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	0	20	**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 : **EB2412280**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412280-001	08-Apr-2024 00:00	0207_MW038_240408	✓

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)

[redacted]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

DERP reports

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

[redacted]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

[redacted]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Ch

(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412280**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:24
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- 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	0207_MW038_240408	----	----	----	----
				Sampling date / time	08-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412280-001	--------	--------	--------	--------
					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		**0.04**	----	----	----	----
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		**0.58**	----	----	----	----
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		**0.04**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	----	----	----	----
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	0207_MW038_240408	----	----	----	----
				Sampling date / time	08-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412280-001	--------	--------	--------	--------
					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		**0.95**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.80**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.91**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.9**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.8**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412280**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412280**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW038_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW038_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW038_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW038_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW038_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-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	20	**0.00**	**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	0	20	**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	: **EB2412281**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412281-001	09-Apr-2024 00:00	0207_MW019_240409	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412281**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024 12:02
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- 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	0207_MW019_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412281-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.05**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	----	----	----	----
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	0207_MW019_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412281-001	--------	--------	--------	--------
					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		**0.07**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.07**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**86.1**	----	----	----	----
13C8-PFOA	----	0.02	%		**93.5**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412281**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412281**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW019_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW019_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW019_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW019_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW019_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-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	20	**0.00**	**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	0	20	**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	: **EB2412283**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412283-001	10-Apr-2024 00:00	0207_MW288_240410	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

[redacted]

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412283**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:24
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- 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	0207_MW288_240410	----	----	----	----
				Sampling date / time	10-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412283-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
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	0207_MW288_240410	----	----	----	----
				Sampling date / time	10-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412283-001	--------	--------	--------	--------
					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	%		**91.4**	----	----	----	----
13C8-PFOA	----	0.02	%		**92.1**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412283**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412283**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	[redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW288_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW288_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW288_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW288_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW288_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-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	20	**0.00**	**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	0	20	**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	: **EB2412285**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412285-001	09-Apr-2024 00:00	0207_MW147_240409	✓

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)

[redacted]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

DERP reports

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

[redacted]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- A4 - AU Tax Invoice (INV)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

[redacted]

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)
- EDI Format - ESDAT (ESDAT)

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412285**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:24
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- 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	0207_MW147_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412285-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
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	0207_MW147_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412285-001	--------	--------	--------	--------
					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	%		**78.0**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.6**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412285**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5736069)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	91.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	92.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	98.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	88.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	83.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736069)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	98.3	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	97.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.3	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	105	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736069)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	98.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	99.5	70.0	130
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	98.4	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736069)								

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: 5736069) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	96.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	89.2	70.0	130
EP231P: PFAS Sums (QCLot: 5736069)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412285**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	[redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW147_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW147_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW147_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW147_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW147_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-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	20	**0.00**	**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	0	20	**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	: **EB2412368**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 19-Apr-2024
Client Requested Due Date	: 24-Apr-2024	Scheduled Reporting Date	: **24-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 13 / 13

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
- ***SRN Reissued 19/04/20242: As per the email from [redacted] 19/04/2024, EP231X PFAS has now been assigned for testing to ALS #013. Due to the extra analysis being added to this work order, the due date has been moved to the 24/04/2024.***
- **Please be aware ALS received an additional sample '1435_MW017_240405'. In this instance, ALS has not assigned analysis to this sample. If you wish to discuss this, please contact Client services at ALSEnviro.Brisbane@alsglobal.com or ph: 3243 7222.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412368-001	05-Apr-2024 00:00	1435_MW001_240405	✓
EB2412368-002	05-Apr-2024 00:00	1435_MW002_240405	✓
EB2412368-003	04-Apr-2024 00:00	1435_MW003_240404	✓
EB2412368-004	04-Apr-2024 00:00	1435_MW004_240404	✓
EB2412368-005	04-Apr-2024 00:00	1435_MW005_240404	✓
EB2412368-006	04-Apr-2024 00:00	1435_MW006_240404	✓
EB2412368-007	05-Apr-2024 00:00	1435_MW008_240405	✓
EB2412368-008	04-Apr-2024 00:00	1435_MW009_240404	✓
EB2412368-009	04-Apr-2024 00:00	1435_MW010_240404	✓
EB2412368-010	04-Apr-2024 00:00	1435_MW011_240404	✓
EB2412368-011	05-Apr-2024 00:00	1435_MW012_240405	✓
EB2412368-012	05-Apr-2024 00:00	1435_MW013_240405	✓
EB2412368-013	05-Apr-2024 00:00	1435_MW017_240405	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412368**	Page	: 1 of 9
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024 16:11
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 13		
No. of samples analysed	: 13		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

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

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 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	1435_MW001_240405	1435_MW002_240405	1435_MW003_240404	1435_MW004_240404	1435_MW005_240404
				Sampling date / time	05-Apr-2024 00:00	05-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412368-001	EB2412368-002	EB2412368-003	EB2412368-004	EB2412368-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.04**	**0.57**	**0.91**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.03**	**0.34**	**1.00**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.14**	**1.24**	**4.88**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.26**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.08**	**0.04**	**4.12**	<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	**1.8**	**0.2**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.15**	**18.8**	**0.42**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.12**	**15.2**	**1.30**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.04**	**6.52**	**0.39**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**0.24**	**0.61**	<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	1435_MW001_240405	1435_MW002_240405	1435_MW003_240404	1435_MW004_240404	1435_MW005_240404
				Sampling date / time	05-Apr-2024 00:00	05-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412368-001	EB2412368-002	EB2412368-003	EB2412368-004	EB2412368-005
					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		**0.06**	**0.17**	<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		**0.68**	**45.1**	**14.3**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.22**	**1.28**	**9.00**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.65**	**44.6**	**12.8**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.6**	**79.2**	**90.8**	**87.7**	**88.1**
13C8-PFOA	----	0.02	%		**103**	**93.3**	**104**	**101**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1435_MW006_240404	1435_MW008_240405	1435_MW009_240404	1435_MW010_240404	1435_MW011_240404
				Sampling date / time	04-Apr-2024 00:00	05-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412368-006	EB2412368-007	EB2412368-008	EB2412368-009	EB2412368-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.75**	**0.19**	**0.06**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.81**	**0.14**	**0.04**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.02**	**4.19**	**0.70**	**0.15**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.24**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**5.28**	**0.12**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**0.1**	**0.1**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.46**	**0.33**	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**1.20**	**0.37**	**0.07**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.31**	**0.14**	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.50**	**0.12**	**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	1435_MW006_240404	1435_MW008_240405	1435_MW009_240404	1435_MW010_240404	1435_MW011_240404
				Sampling date / time	04-Apr-2024 00:00	05-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412368-006	EB2412368-007	EB2412368-008	EB2412368-009	EB2412368-010
					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		<0.01	**0.02**	**14.1**	**2.25**	**0.41**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.02**	**9.47**	**0.82**	**0.17**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.02**	**12.8**	**2.07**	**0.37**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**80.3**	**90.4**	**103**	**88.0**	**98.0**
13C8-PFOA	----	0.02	%		**100**	**101**	**103**	**100**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	1435_MW012_240405	1435_MW013_240405	1435_MW017_240405	----	----
				Sampling date / time	05-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412368-011	EB2412368-012	EB2412368-013	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.14**	<0.02	**0.07**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.09**	<0.02	**0.07**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.40**	<0.01	**0.33**	----	----
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		**0.26**	<0.01	**0.04**	----	----
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		**0.2**	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.89**	<0.02	**0.03**	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.98**	<0.02	**0.10**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.09**	<0.02	**0.02**	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.04**	<0.01	**0.03**	----	----
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	1435_MW012_240405	1435_MW013_240405	1435_MW017_240405	----	----
				Sampling date / time	05-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412368-011	EB2412368-012	EB2412368-013	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**4.12**	<0.01	**0.69**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.66**	<0.01	**0.37**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**4.00**	<0.01	**0.62**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**90.8**	**98.1**	**98.4**	----	----
13C8-PFOA	----	0.02	%		**98.0**	**100**	**99.3**	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412368**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 13		
No. of samples analysed	: 13		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

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

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5736069)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	91.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	92.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	98.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	88.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	83.2	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739170)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	95.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	94.1	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	94.6	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.6	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	89.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736069)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	98.3	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	97.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.3	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	105	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739170)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	88.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	92.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.9	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: 5739170) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	89.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	98.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	92.1	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736069)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	98.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	99.5	70.0	130
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	98.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739170)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.6	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	96.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	94.9	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.9	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	98.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	85.7	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736069)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	96.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	89.2	70.0	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
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739170)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	91.2	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	96.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	87.3	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	74.4	70.0	130
EP231P: PFAS Sums (QCLot: 5736069)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5739170)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412368**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]	No. of samples received	: 13
Order number	: 60612563 2.1	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **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	40	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	40	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) 1435_MW003_240404, 1435_MW004_240404, 1435_MW005_240404, 1435_MW006_240404, 1435_MW009_240404, 1435_MW010_240404, 1435_MW011_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW001_240405, 1435_MW002_240405, 1435_MW008_240405, 1435_MW012_240405, 1435_MW013_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW017_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 1435_MW003_240404, 1435_MW004_240404, 1435_MW005_240404, 1435_MW006_240404, 1435_MW009_240404, 1435_MW010_240404, 1435_MW011_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW001_240405, 1435_MW002_240405, 1435_MW008_240405, 1435_MW012_240405, 1435_MW013_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW017_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-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) 1435_MW003_240404, 1435_MW004_240404, 1435_MW005_240404, 1435_MW006_240404, 1435_MW009_240404, 1435_MW010_240404, 1435_MW011_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW001_240405, 1435_MW002_240405, 1435_MW008_240405, 1435_MW012_240405, 1435_MW013_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW017_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 1435_MW003_240404, 1435_MW004_240404, 1435_MW005_240404, 1435_MW006_240404, 1435_MW009_240404, 1435_MW010_240404, 1435_MW011_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW001_240405, 1435_MW002_240405, 1435_MW008_240405, 1435_MW012_240405, 1435_MW013_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW017_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 1435_MW003_240404, 1435_MW004_240404, 1435_MW005_240404, 1435_MW006_240404, 1435_MW009_240404, 1435_MW010_240404, 1435_MW011_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW001_240405, 1435_MW002_240405, 1435_MW008_240405, 1435_MW012_240405, 1435_MW013_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 1435_MW017_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-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	40	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	40	**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	: **EB2412372**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 15-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412372-001	09-Apr-2024 00:00	0207_MW292_240409	✓
EB2412372-002	09-Apr-2024 00:00	0207_MW293_240409	✓

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

[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

DERP ESDAT REPORTS
- EDI Format - ESDAT (ESDAT) 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
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - ESDAT (ESDAT) 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

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412372**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024 11:58
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

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

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 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	0207_MW292_240409	0207_MW293_240409	----	----	----
				Sampling date / time	09-Apr-2024 00:00	09-Apr-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2412372-001	EB2412372-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.11**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.17**	**0.02**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW292_240409	0207_MW293_240409	----	----	----
				Sampling date / time	09-Apr-2024 00:00	09-Apr-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2412372-001	EB2412372-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.28**	**0.02**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.28**	**0.02**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.28**	**0.02**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**68.2**	**80.3**	----	----	----
13C8-PFOA	----	0.02	%		**88.1**	**102**	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412372**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

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

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739002)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	96.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	109	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	81.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	84.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	80.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739002)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	88.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	99.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	90.6	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	93.9	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	92.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739002)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.9	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	108	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	78.3	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.4	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	87.9	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739002)								

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: 5739002) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	92.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	93.8	70.0	130
EP231P: PFAS Sums (QCLot: 5739002)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412372**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 23-Apr-2024
Sampler	[redacted]	No. of samples received	: 2
Order number	: 60612563 2.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	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)								
0207_MW292_240409,	0207_MW293_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW292_240409,	0207_MW293_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0207_MW292_240409,	0207_MW293_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0207_MW292_240409,	0207_MW293_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0207_MW292_240409,	0207_MW293_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-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	12	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	**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	: **EB2412376**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 15-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412376-001	10-Apr-2024 00:00	0207_MW113_240410	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412376**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024 12:00
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 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	0207_MW113_240410	----	----	----	----
				Sampling date / time	10-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412376-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.02**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.16**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.11**	----	----	----	----
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		**0.03**	----	----	----	----
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	0207_MW113_240410	----	----	----	----
				Sampling date / time	10-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412376-001	--------	--------	--------	--------
					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		**0.34**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.27**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.32**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**85.5**	----	----	----	----
13C8-PFOA	----	0.02	%		**101**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412376**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739002)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	96.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	109	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	81.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	84.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	80.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739002)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	88.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	99.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	90.6	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	93.9	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	92.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739002)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.9	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	108	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	78.3	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.4	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	87.9	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739002)								

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: 5739002) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	92.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	93.8	70.0	130
EP231P: PFAS Sums (QCLot: 5739002)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412376**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	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)							
0207_MW113_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW113_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW113_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW113_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW113_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-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	12	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	**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	: **EB2412378**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 15-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 4 / 4

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**
- EP231: ALS requires 20ml of sample to analyse water samples for EP231X. Where 125ml bottles have been submitted analysis has been re-logged for direct injection (EP231-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.

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: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)
EB2412378-004	08-Apr-2024 00:00	0207_SD045_240408	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (30 analytes)	WATER - EP231X-INJ PFAS - Full Suite (31 analytes)
EB2412378-001	08-Apr-2024 00:00	0207_MW003_240408	✓	
EB2412378-002	11-Apr-2024 00:00	0207_MW283_240411	✓	
EB2412378-003	08-Apr-2024 00:00	0207_SW059_240408		✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

QUALITY CONTROL REPORT

Work Order	: **EB2412378**	Page	: 1 of 11
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: + [redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 4		
No. of samples analysed	: 4		

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]	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5736529)									
EB2412378-004	0207_SD045_240408	EA055: Moisture Content	----	0.1	%	42.3	41.2	2.7	0% - 20%
EM2405741-032	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	14.3	15.5	8.1	0% - 50%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5739030)									
EB2412378-004	0207_SD045_240408	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5739030)									
EB2412378-004	0207_SD045_240408	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5739030) - continued									
EB2412378-004	0207_SD045_240408	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5739030)									
EB2412378-004	0207_SD045_240408	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5739030)									
EB2412378-004	0207_SD045_240408	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5739030)									
EB2412378-004	0207_SD045_240408	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5739031)									
EB2412378-003	0207_SW059_240408	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5739031) - continued									
EB2412378-003	0207_SW059_240408	EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: 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: 5739031)									
EB2412378-003	0207_SW059_240408	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5739031)									
EB2412378-003	0207_SW059_240408	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 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: 5739031)									
EB2412378-003	0207_SW059_240408	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5739031) - continued									
EB2412378-003	0207_SW059_240408	EP231X-INJ: 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: 5739031)									
EB2412378-003	0207_SW059_240408	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739030)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	105	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	85.4	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	91.0	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	79.5	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	93.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	78.4	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739030)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	84.0	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.5	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.9	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.9	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	119	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	107	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739030)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	122	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	96.1	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.4	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739030)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739030) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	102	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	90.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	98.5	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	125	70.0	130
EP231P: PFAS Sums (QCLot: 5739030)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----

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: 5736069)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	91.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	92.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	98.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	88.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	83.2	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739031)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	98.5	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.471 µg/L	100	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.457 µg/L	99.2	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	104	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.465 µg/L	101	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.482 µg/L	100	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736069)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	98.3	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	97.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.2	71.0	129

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: 5736069) - continued								
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.3	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	105	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739031)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	96.3	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	97.5	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	95.9	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	98.2	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	102	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	101	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	97.5	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	99.6	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	107	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	111	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736069)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	98.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	99.5	70.0	130
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	98.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739031)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	97.4	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	101	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	97.4	70.0	130
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	101	70.0	130

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: 5739031) - continued								
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	99.2	70.0	130
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	104	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	96.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736069)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	96.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	89.2	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739031)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	99.1	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	110	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	100	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	89.4	70.0	130
EP231P: PFAS Sums (QCLot: 5736069)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5739031)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739030)							
EB2412387-045	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	85.1	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	92.1	73.0	123

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739030) - continued							
EB2412387-045	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	80.7	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	93.4	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	# 51.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739030)							
EB2412387-045	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	82.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	87.8	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	86.6	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	88.2	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	99.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	99.5	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	75.6	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	75.8	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	80.7	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	96.3	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# 162	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739030)							
EB2412387-045	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	82.4	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# 67.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	74.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# 54.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	73.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	77.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	61.5	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739030)							
EB2412387-045	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	70.3	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	73.5	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	81.7	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	# 42.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739031)							
EB2412403-037	Anonymous	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.444 µg/L	106	72.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.471 µg/L	102	71.0	127
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.457 µg/L	105	68.0	131
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	104	69.0	134
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.465 µg/L	99.1	65.0	140
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	93.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739031)							
EB2412403-037	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	87.6	73.0	129
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	102	72.0	129
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	103	72.0	129
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	101	72.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	106	71.0	133
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	100	69.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	102	71.0	129
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	99.9	69.0	133
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	110	72.0	134
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	114	65.0	144
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739031)							
EB2412403-037	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	103	67.0	137
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	106	68.0	141
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	103	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	104	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	102	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	103	65.0	136
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	100	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739031)							
EB2412403-037	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.469 µg/L	95.6	63.0	143
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.476 µg/L	105	64.0	140
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	104	67.0	138
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	90.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412378**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	[redacted]	No. of samples received	: 4
Order number	: 60612563 2.1	No. of samples analysed	: 4

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2412387--045	Anonymous	**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	EB2412387--045	Anonymous	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	51.3 %	59.0-134%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2412387--045	Anonymous	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	162 %	69.0-133%	**Recovery greater than upper data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2412387--045	Anonymous	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	31506-32-8	67.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2412387--045	Anonymous	**N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	24448-09-7	54.8 %	70.0-130%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2412387--045	Anonymous	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	42.4 %	70.0-130%	**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	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method	***Sample Date***	*Extraction / Preparation*			*Analysis*		
Container / *Client Sample ID(s)*		***Date extracted***	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0207_SD045_240408	**08-Apr-2024**	----	----	----	**19-Apr-2024**	22-Apr-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0207_SD045_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0207_SD045_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0207_SD045_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0207_SD045_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0207_SD045_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	30-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
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW003_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW059_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW283_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW003_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW059_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW283_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW003_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW059_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW283_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-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) 0207_MW003_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW059_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW283_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW003_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW059_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW283_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-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: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	**20.00**	**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	20	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**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
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**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
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, 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 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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	: **EB2412378**	Page	: 1 of 9
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:25
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: Poor matrix spike recovery for sample EB2412387-045 due to sample matrix interference.
- EP231: ALS requires 20ml of sample to analyse water samples for EP231X. Where 125ml bottles have been submitted analysis has been re-logged for direct injection (EP231-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.
- 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.
- 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 USEPA 1633 limits 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.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD045_240408	----	----	----	----
				Sampling date / time	08-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412378-004	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**42.3**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0008**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD045_240408	----	----	----	----
				Sampling date / time	08-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412378-004	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0008**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0008**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0008**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**90.2**	----	----	----	----
13C8-PFOA	----	0.0002	%		**100**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW003_240408	0207_MW283_240411	0207_SW059_240408	----	----
				Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412378-001	EB2412378-002	EB2412378-003	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	<0.01	----	----
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	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	----	<0.10	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW003_240408	0207_MW283_240411	0207_SW059_240408	----	----
				Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412378-001	EB2412378-002	EB2412378-003	--------	--------
					Result	Result	Result	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
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	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW003_240408	0207_MW283_240411	0207_SW059_240408	----	----
				Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412378-001	EB2412378-002	EB2412378-003	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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	----	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	<0.05	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW003_240408	0207_MW283_240411	0207_SW059_240408	----	----
				Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412378-001	EB2412378-002	EB2412378-003	--------	--------
					Result	Result	Result	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	<0.01	----	----
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	----	----
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**86.6**	**95.6**	----	----	----
13C4-PFOS	----	0.02	%		----	----	**99.8**	----	----
13C8-PFOA	----	0.02	%		**101**	**99.1**	----	----	----
13C8-PFOA	----	0.02	%		----	----	**102**	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EP231S: PFAS Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2412382**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	[redacted]
E-mail	[redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: + [redacted]
Facsimile	: [redacted]	Facsimile	: + [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 15-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 4 / 4

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412382-001	10-Apr-2024 00:00	0207_MW114_240410	✓
EB2412382-002	10-Apr-2024 00:00	0207_MW118_240410	✓
EB2412382-003	10-Apr-2024 00:00	0207_MW122_240410	✓
EB2412382-004	10-Apr-2024 00:00	0207_MW157_240410	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) Email
- EDI Format - ESDAT (ESDAT) Email

DERP reports
- EDI Format - ESDAT (ESDAT) 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
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) Email
- EDI Format - ESDAT (ESDAT) 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) Email
- EDI Format - ESDAT (ESDAT) Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412382**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	[redacted]	Telephone	: +[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:22
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 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	0207_MW114_240410	0207_MW118_240410	0207_MW122_240410	0207_MW157_240410	----
				Sampling date / time	10-Apr-2024 00:00	10-Apr-2024 00:00	10-Apr-2024 00:00	10-Apr-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2412382-001	EB2412382-002	EB2412382-003	EB2412382-004	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.18**	**0.36**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.17**	**0.34**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**1.08**	**2.09**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.04**	**0.21**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.70**	**3.41**	----
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	**0.10**	**0.15**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.32**	**0.61**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.05**	**0.09**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.06**	**0.15**	----
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	0207_MW114_240410	0207_MW118_240410	0207_MW122_240410	0207_MW157_240410	----
				Sampling date / time	10-Apr-2024 00:00	10-Apr-2024 00:00	10-Apr-2024 00:00	10-Apr-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2412382-001	EB2412382-002	EB2412382-003	EB2412382-004	--------
					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	**2.77**	**7.68**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**1.78**	**5.50**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**2.49**	**6.96**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**79.3**	**91.3**	**94.2**	**80.3**	----
13C8-PFOA	----	0.02	%		**98.0**	**101**	**97.6**	**99.7**	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

QUALITY CONTROL REPORT

Work Order	: **EB2412382**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	[redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5736069)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	91.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	92.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	98.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	88.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	83.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736069)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	98.3	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	97.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.3	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	105	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736069)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	98.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	99.5	70.0	130
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	98.4	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736069)								

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: 5736069) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	96.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	89.2	70.0	130
EP231P: PFAS Sums (QCLot: 5736069)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412382**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]	No. of samples received	: 4
Order number	: 60612563 2.1	No. of samples analysed	: 4

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	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW114_240410, 0207_MW118_240410, 0207_MW122_240410, 0207_MW157_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW114_240410, 0207_MW118_240410, 0207_MW122_240410, 0207_MW157_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW114_240410, 0207_MW118_240410, 0207_MW122_240410, 0207_MW157_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW114_240410, 0207_MW118_240410, 0207_MW122_240410, 0207_MW157_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW114_240410, 0207_MW118_240410, 0207_MW122_240410, 0207_MW157_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-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	20	**0.00**	**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	0	20	**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	: **EB2412387**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 4
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 15-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 39 / 39

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
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples QC211, QC212, QC213 X 2, QC214, QC215 have been forwarded to NMI , as requested. Please note that this will incur a freight forwarding fee.**
- 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.
- **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.**
- EP231: ALS requires 20ml of sample to analyse water samples for EP231X. Where 125ml bottles have been submitted analysis has been logged for direct injection (EP231-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.

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: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)
EB2412387-022	12-Apr-2024 00:00	0207_SD007_240412	✓	✓
EB2412387-024	12-Apr-2024 00:00	0207_SD011_240412	✓	✓
EB2412387-025	12-Apr-2024 00:00	0207_SD013_240412	✓	✓
EB2412387-026	12-Apr-2024 00:00	0207_SD015_240412	✓	✓
EB2412387-027	12-Apr-2024 00:00	0207_SD016_240412	✓	✓
EB2412387-028	05-Apr-2024 00:00	0207_SD022_240405	✓	✓
EB2412387-029	03-Apr-2024 00:00	0207_SD024_240403	✓	✓
EB2412387-030	03-Apr-2024 00:00	0207_SD025_240403	✓	✓
EB2412387-031	12-Apr-2024 00:00	0207_SD036_240412	✓	✓
EB2412387-032	12-Apr-2024 00:00	0207_SD037_240412	✓	✓
EB2412387-033	12-Apr-2024 00:00	0207_SD038_240412	✓	✓
EB2412387-034	12-Apr-2024 00:00	0207_SD040_240412	✓	✓
EB2412387-035	12-Apr-2024 00:00	0207_SD070_240412	✓	✓
EB2412387-036	12-Apr-2024 00:00	0207_SD102_240412	✓	✓
EB2412387-037	12-Apr-2024 00:00	0207_SD105_240412	✓	✓
EB2412387-038	05-Apr-2024 00:00	0207_SD106_240405	✓	✓
EB2412387-039	03-Apr-2024 00:00	0207_SD107_240403	✓	✓
EB2412387-040	03-Apr-2024 00:00	0207_QC113_240403	✓	✓
EB2412387-042	03-Apr-2024 00:00	0207_QC114_240403	✓	✓
EB2412387-044	03-Apr-2024 00:00	0207_QC115_240403	✓	✓
EB2412387-045	12-Apr-2024 00:00	0207_SD010_240412	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (30 analytes)	WATER - EP231X-INJ PFAS - Full Suite (31 analytes)
EB2412387-001	12-Apr-2024 00:00	0207_SW004_240412		✓
EB2412387-002	12-Apr-2024 00:00	0207_SW009_240412		✓
EB2412387-003	12-Apr-2024 00:00	0207_SW010_240412		✓
EB2412387-004	12-Apr-2024 00:00	0207_SW011_240412		✓
EB2412387-005	12-Apr-2024 00:00	0207_SW012_240412		✓
EB2412387-006	12-Apr-2024 00:00	0207_SW013_240412		✓
EB2412387-007	03-Apr-2024 00:00	0207_SW024_240403		✓
EB2412387-008	12-Apr-2024 00:00	0207_SW025_240412		✓
EB2412387-009	12-Apr-2024 00:00	0207_SW026_240412		✓
EB2412387-010	12-Apr-2024 00:00	0207_SW027_240412		✓
EB2412387-011	12-Apr-2024 00:00	0207_SW028_240412		✓
EB2412387-012	12-Apr-2024 00:00	0207_SW040_240412	✓	
EB2412387-013	12-Apr-2024 00:00	0207_SW043_240412		✓
EB2412387-014	05-Apr-2024 00:00	0207_SW065_240405		✓
EB2412387-015	05-Apr-2024 00:00	0207_SW066_240405		✓
EB2412387-016	05-Apr-2024 00:00	0207_QC111_240405		✓
EB2412387-018	05-Apr-2024 00:00	0207_QC112_240405		✓
EB2412387-020	03-Apr-2024 00:00	0207_QC113_240403		✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231P: PFAS Sums
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412387**	Page	: 1 of 23
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024 16:15
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 39		
No. of samples analysed	: 39		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X: LOR for particular samples have been raised due to the high moisture content.
- EP231X: Poor matrix spike recovery for sample EB2412387-045 due to sample matrix interference.
- EP231X-INJ: Samples required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- Samples # 33 & 36 analysed and reported "as received" as per Peter.
- EP231: ALS requires 20ml of sample to analyse water samples for EP231X. Where 125ml bottles have been submitted analysis has been logged for direct injection (EP231-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.
- 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.
- 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 USEPA 1633 limits 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.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD007_240412	0207_SD011_240412	0207_SD013_240412	0207_SD015_240412	0207_SD016_240412
				Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-022	EB2412387-024	EB2412387-025	EB2412387-026	EB2412387-027
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**36.9**	**72.4**	**40.7**	**34.9**	**39.3**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0005	**0.0004**	<0.0002	**0.0002**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	**0.0158**	**0.0104**	**0.0030**	**0.0099**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	**0.0011**	**0.0010**	**0.0004**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.002	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0003**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0008**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0015**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0017**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0006**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0005	**0.0004**	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0207_SD007_240412	0207_SD011_240412	0207_SD013_240412	0207_SD015_240412	0207_SD016_240412
			Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	EB2412387-022	EB2412387-024	EB2412387-025	EB2412387-026	EB2412387-027
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	**0.0169**	**0.0122**	**0.0034**	**0.0150**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	**0.0158**	**0.0108**	**0.0030**	**0.0101**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	**0.0158**	**0.0108**	**0.0030**	**0.0101**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**102**	**90.2**	**93.5**	**100**	**107**
13C8-PFOA	----	0.0002	%	**108**	**89.2**	**95.0**	**100**	**98.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0207_SD022_240405	0207_SD024_240403	0207_SD025_240403	0207_SD036_240412	0207_SD037_240412
			Sampling date / time	05-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	EB2412387-028	EB2412387-029	EB2412387-030	EB2412387-031	EB2412387-032
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**47.6**	**39.2**	**23.2**	**32.8**	**46.1**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0009**	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0242**	**0.0196**	**0.0098**	**0.0011**	**0.0083**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0006**	**0.0004**	**0.0009**	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	**0.0023**	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	**0.0026**	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	**0.0044**	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0002**	<0.0002	**0.0082**	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	**0.0121**	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	**0.0386**	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	**0.139**	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	**0.413**	**0.0025**	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	**0.312**	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	**0.270**	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0207_SD022_240405	0207_SD024_240403	0207_SD025_240403	0207_SD036_240412	0207_SD037_240412
			Sampling date / time	05-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	EB2412387-028	EB2412387-029	EB2412387-030	EB2412387-031	EB2412387-032
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	**0.0040**	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	**0.146**	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	**0.0257**	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0259**	**0.0203**	**1.39**	**0.0036**	**0.0083**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0251**	**0.0199**	**0.0098**	**0.0011**	**0.0083**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0253**	**0.0199**	**0.177**	**0.0011**	**0.0083**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**94.5**	**86.5**	**94.0**	**89.2**	**97.2**
13C8-PFOA	----	0.0002	%	**102**	**99.2**	**94.8**	**105**	**91.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0207_SD038_240412	0207_SD040_240412	0207_SD070_240412	0207_SD102_240412	0207_SD105_240412
			Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	EB2412387-033	EB2412387-034	EB2412387-035	EB2412387-036	EB2412387-037
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**54.1**	**32.7**	**46.2**	**54.0**	**39.7**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0017**	<0.0002	**0.0011**	**0.0175**	**0.0077**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	**0.0017**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.002	<0.001	<0.001	<0.002	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	**0.0002**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	**0.0011**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	**0.0003**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0207_SD038_240412	0207_SD040_240412	0207_SD070_240412	0207_SD102_240412	0207_SD105_240412
			Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	EB2412387-033	EB2412387-034	EB2412387-035	EB2412387-036	EB2412387-037
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0004	<0.0002	<0.0002	<0.0004	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0010	<0.0005	<0.0005	<0.0010	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0017**	<0.0002	**0.0011**	**0.0192**	**0.0093**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0017**	<0.0002	**0.0011**	**0.0175**	**0.0077**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0017**	<0.0002	**0.0011**	**0.0175**	**0.0079**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**80.7**	**84.0**	**79.4**	**86.5**	**102**
13C8-PFOA	----	0.0002	%	**103**	**102**	**101**	**86.2**	**98.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD106_240405	0207_SD107_240403	0207_QC113_240403	0207_QC114_240403	0207_QC115_240403
				Sampling date / time	05-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-038	EB2412387-039	EB2412387-040	EB2412387-042	EB2412387-044
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**45.0**	**35.4**	**42.1**	**18.5**	**36.8**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0014**	**0.0031**	**0.0018**	**0.0002**	**0.0026**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	**0.0005**	<0.0002	**0.0023**	**0.0003**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0484**	**0.0425**	**0.0411**	**1.24**	**0.0311**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	**0.0011**	**0.0006**	**0.0190**	**0.0006**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	**0.001**	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0006**	<0.0002	**0.0028**	**0.0004**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0003**	**0.0005**	**0.0003**	**0.0027**	**0.0004**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	**0.0004**	<0.0002	**0.0055**	**0.0004**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0004**	**0.0010**	<0.0002	**0.0148**	**0.0009**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		**0.0005**	**0.0017**	<0.0002	**0.0421**	**0.0015**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		**0.0004**	**0.0051**	<0.0002	**0.744**	**0.0052**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0008**	**0.0110**	<0.0002	**0.791**	**0.0077**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0019**	**0.0172**	**0.0002**	**0.932**	**0.0108**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0006**	**0.0110**	<0.0002	**0.558**	**0.0074**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	**0.0067**	<0.0005	**0.483**	**0.0052**
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	**0.0003**	**0.0002**	**0.0042**	**0.0002**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0207_SD106_240405	0207_SD107_240403	0207_QC113_240403	0207_QC114_240403	0207_QC115_240403
			Sampling date / time	05-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	EB2412387-038	EB2412387-039	EB2412387-040	EB2412387-042	EB2412387-044
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	**0.0044**	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	**2.20**	**0.0013**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	**0.0448**	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0547**	**0.103**	**0.0442**	**7.09**	**0.0760**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0498**	**0.0456**	**0.0429**	**1.24**	**0.0337**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0505**	**0.0484**	**0.0432**	**3.47**	**0.0371**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**104**	**104**	**93.8**	**105**	**94.5**
13C8-PFOA	----	0.0002	%	**96.8**	**98.5**	**98.0**	**99.8**	**92.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD010_240412	----	----	----	----
				Sampling date / time	12-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412387-045	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**37.2**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0005**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0109**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD010_240412	----	----	----	----
				Sampling date / time	12-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412387-045	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0114**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0114**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0114**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**107**	----	----	----	----
13C8-PFOA	----	0.0002	%		**104**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW004_240412	0207_SW009_240412	0207_SW010_240412	0207_SW011_240412	0207_SW012_240412
				Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-001	EB2412387-002	EB2412387-003	EB2412387-004	EB2412387-005
					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	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.02	**0.21**	<0.02	<0.02	<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		<0.02	**0.46**	**0.05**	**0.04**	**0.06**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
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	**0.05**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.02	<0.02	<0.02	<0.02	<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	0207_SW004_240412	0207_SW009_240412	0207_SW010_240412	0207_SW011_240412	0207_SW012_240412
				Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-001	EB2412387-002	EB2412387-003	EB2412387-004	EB2412387-005
					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		<0.02	**0.82**	**0.05**	**0.04**	**0.06**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.02	**0.67**	**0.05**	**0.04**	**0.06**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.02	**0.78**	**0.05**	**0.04**	**0.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**83.6**	**87.6**	**80.7**	**79.6**	**82.3**
13C8-PFOA	----	0.02	%		**94.9**	**99.5**	**95.8**	**102**	**96.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW013_240412	0207_SW024_240403	0207_SW025_240412	0207_SW026_240412	0207_SW027_240412
				Sampling date / time	12-Apr-2024 00:00	03-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-006	EB2412387-007	EB2412387-008	EB2412387-009	EB2412387-010
					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	**0.07**	<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		**0.08**	**0.05**	**0.08**	**0.26**	**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		**0.30**	**0.55**	**0.32**	**0.57**	**0.34**
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	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.02**	<0.02	**0.04**	**0.05**	**0.03**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.02	<0.02	<0.02	<0.02	<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	0207_SW013_240412	0207_SW024_240403	0207_SW025_240412	0207_SW026_240412	0207_SW027_240412
				Sampling date / time	12-Apr-2024 00:00	03-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-006	EB2412387-007	EB2412387-008	EB2412387-009	EB2412387-010
					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		**0.42**	**0.60**	**0.44**	**1.03**	**0.46**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.38**	**0.60**	**0.40**	**0.83**	**0.43**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.42**	**0.60**	**0.44**	**0.95**	**0.46**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**78.8**	**83.9**	**78.0**	**80.6**	**85.1**
13C8-PFOA	----	0.02	%		**98.8**	**102**	**99.3**	**94.1**	**96.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW028_240412	0207_SW040_240412	0207_SW043_240412	0207_SW065_240405	0207_SW066_240405
				Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-011	EB2412387-012	EB2412387-013	EB2412387-014	EB2412387-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	<0.02	**0.06**	**0.06**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	<0.02	<0.02	**0.03**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.02	----	<0.02	**0.18**	**0.35**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.02	----	<0.02	**0.43**	**0.80**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
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	0.10	µg/L		<0.10	----	<0.10	<0.10	<0.10
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	<0.02	<0.02	**0.03**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	<0.02	**0.04**	**0.07**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	<0.02	<0.02	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.02	----	<0.02	**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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW028_240412	0207_SW040_240412	0207_SW043_240412	0207_SW065_240405	0207_SW066_240405
				Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-011	EB2412387-012	EB2412387-013	EB2412387-014	EB2412387-015
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
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
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	----	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW028_240412	0207_SW040_240412	0207_SW043_240412	0207_SW065_240405	0207_SW066_240405
				Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-011	EB2412387-012	EB2412387-013	EB2412387-014	EB2412387-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.02	----	----	----
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
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_SW028_240412	0207_SW040_240412	0207_SW043_240412	0207_SW065_240405	0207_SW066_240405
				Sampling date / time	12-Apr-2024 00:00	12-Apr-2024 00:00	12-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412387-011	EB2412387-012	EB2412387-013	EB2412387-014	EB2412387-015
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
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		<0.02	----	<0.02	**0.78**	**1.46**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.02	----	<0.02	**0.61**	**1.15**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.02	----	<0.02	**0.72**	**1.37**
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	%		----	**92.3**	----	----	----
13C4-PFOS	----	0.02	%		**83.2**	----	**81.8**	**86.1**	**82.2**
13C8-PFOA	----	0.02	%		----	**97.3**	----	----	----
13C8-PFOA	----	0.02	%		**101**	----	**99.1**	**97.6**	**96.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC111_240405	0207_QC112_240405	0207_QC113_240403	----	----
				Sampling date / time	05-Apr-2024 00:00	05-Apr-2024 00:00	03-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412387-016	EB2412387-018	EB2412387-020	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.07**	**0.05**	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.03**	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.16**	**0.38**	**0.06**	----	----
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		**0.41**	**0.79**	**0.56**	----	----
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	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.03**	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.03**	**0.06**	<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**	**0.03**	<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	0207_QC111_240405	0207_QC112_240405	0207_QC113_240403	----	----
				Sampling date / time	05-Apr-2024 00:00	05-Apr-2024 00:00	03-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412387-016	EB2412387-018	EB2412387-020	--------	--------
					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		**0.76**	**1.45**	**0.62**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.57**	**1.17**	**0.62**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.68**	**1.36**	**0.62**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**83.9**	**88.8**	**76.4**	----	----
13C8-PFOA	----	0.02	%		**102**	**101**	**97.1**	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate
(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids
(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(SOIL) EP231C: Perfluoroalkyl Sulfonamides
(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids
(SOIL) EP231P: PFAS Sums
(SOIL) EP231S: PFAS Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

QUALITY CONTROL REPORT

Work Order	: **EB2412387**	Page	: 1 of 17
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 39		
No. of samples analysed	: 39		

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]	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5731671)									
EB2412387-022	0207_SD007_240412	EA055: Moisture Content	----	0.1	%	36.9	37.1	0.6	0% - 20%
EB2412387-033	0207_SD038_240412	EA055: Moisture Content	----	0.1	%	54.1	57.0	5.1	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5731672)									
EB2412387-045	0207_SD010_240412	EA055: Moisture Content	----	0.1	%	37.2	34.6	7.3	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5737588)									
EB2412387-022	0207_SD007_240412	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2412387-033	0207_SD038_240412	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002 (0.0004)*	mg/kg	0.0017	0.0017	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5737588) - continued									
EB2412387-033	0207_SD038_240412	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5739030)									
EB2412378-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5737588)									
EB2412387-022	0207_SD007_240412	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2412387-033	0207_SD038_240412	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5737588) - continued									
EB2412387-033	0207_SD038_240412	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001 (0.002)*	mg/kg	<0.002	<0.002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5739030)									
EB2412378-004	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5737588)									
EB2412387-022	0207_SD007_240412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2412387-033	0207_SD038_240412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002 (0.0004)*	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5737588) - continued									
EB2412387-033	0207_SD038_240412	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5739030)									
EB2412378-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5737588)									
EB2412387-022	0207_SD007_240412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2412387-033	0207_SD038_240412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005 (0.0010)*	mg/kg	<0.0010	<0.0010	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5739030)									
EB2412378-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5739030) - continued									
EB2412378-004	Anonymous	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5737588)									
EB2412387-022	0207_SD007_240412	EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2412387-033	0207_SD038_240412	EP231X: Sum of PFAS	----	0.0002 (0.0004)*	mg/kg	0.0017	0.0017	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002 (0.0004)*	mg/kg	0.0017	0.0017	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002 (0.0004)*	mg/kg	0.0017	0.0017	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5739030)									
EB2412378-004	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5739011)									
EB2412387-001	0207_SW004_240412	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2412387-011	0207_SW028_240412	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5739011) - continued									
EB2412387-011	0207_SW028_240412	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: 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: 5739011)									
EB2412387-001	0207_SW004_240412	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EB2412387-011	0207_SW028_240412	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5739011)									
EB2412387-001	0207_SW004_240412	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: 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: 5739011) - continued									
EB2412387-001	0207_SW004_240412	EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2412387-011	0207_SW028_240412	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 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: 5739011)									
EB2412387-001	0207_SW004_240412	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2412387-011	0207_SW028_240412	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	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 (%)*
EP231P: PFAS Sums (QC Lot: 5739011)									
EB2412387-001	0207_SW004_240412	EP231X-INJ: Sum of PFAS	----	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
EB2412387-011	0207_SW028_240412	EP231X-INJ: Sum of PFAS	----	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01 (0.02)*	µg/L	<0.02	<0.02	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: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5737588)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	95.1	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	90.0	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	90.2	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	94.1	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	99.5	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	93.3	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739030)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	105	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	85.4	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	91.0	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	79.5	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	93.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	78.4	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5737588)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	87.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.1	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.4	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.3	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.9	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.4	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.9	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.9	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.9	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739030)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	84.0	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.5	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.9	71.0	131

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739030) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.9	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	119	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	107	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5737588)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	119	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.5	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739030)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	122	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	96.1	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.4	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5737588)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	94.6	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	90.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	96.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	122	70.0	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739030)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	102	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	90.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	98.5	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	125	70.0	130
EP231P: PFAS Sums (QCLot: 5737588)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231P: PFAS Sums (QCLot: 5739030)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----

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: 5739002)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	96.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	109	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	81.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	84.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	80.2	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739011)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	93.0	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.471 µg/L	99.7	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.457 µg/L	102	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	98.1	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.465 µg/L	95.9	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.482 µg/L	104	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739002)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	88.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129

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: 5739002) - continued								
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	99.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	90.6	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	93.9	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	92.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739011)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	96.1	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	101	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	101	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	98.4	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	98.5	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	96.9	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	90.5	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	90.4	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	95.8	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	88.2	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	85.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739002)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.9	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	108	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	78.3	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.4	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	87.9	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739011)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	89.3	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	94.6	68.0	141

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: 5739011) - continued								
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	96.9	70.0	130
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	76.9	70.0	130
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	91.9	70.0	130
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	89.0	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	83.6	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739002)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	92.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	93.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739011)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	96.5	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	92.7	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	94.6	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	90.1	70.0	130
EP231P: PFAS Sums (QCLot: 5739002)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5739011)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5737588)							
EB2412387-024	0207_SD011_240412	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	91.1	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	89.4	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	96.2	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	89.8	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	71.4	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739030)							
EB2412387-045	0207_SD010_240412	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	85.1	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	92.1	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	80.7	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	93.4	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	# 51.3	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5737588)							
EB2412387-024	0207_SD011_240412	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	83.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	77.2	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	83.1	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	81.0	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	89.4	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	83.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	91.3	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	105	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	89.3	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	112	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	109	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739030)							
EB2412387-045	0207_SD010_240412	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	82.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	87.8	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	86.6	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	88.2	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	99.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	99.5	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	75.6	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	75.8	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	80.7	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	96.3	66.0	139

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739030) - continued							
EB2412387-045	0207_SD010_240412	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# 162	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5737588)							
EB2412387-024	0207_SD011_240412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	82.1	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	86.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	96.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	70.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	74.5	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	76.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	85.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739030)							
EB2412387-045	0207_SD010_240412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	82.4	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# 67.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	74.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# 54.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	73.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	77.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	61.5	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5737588)							
EB2412387-024	0207_SD011_240412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	75.6	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	93.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	101	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	84.7	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739030)							
EB2412387-045	0207_SD010_240412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	70.3	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	73.5	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	81.7	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	# 42.4	70.0	130

Sub-Matrix: **WATER**

Matrix Spike (MS) Report

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739011)							
EB2412387-002	0207_SW009_240412	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.444 µg/L	97.0	72.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.471 µg/L	73.8	71.0	127
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.457 µg/L	126	68.0	131
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	81.3	69.0	134
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.465 µg/L	80.1	65.0	140
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	105	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739011)							
EB2412387-002	0207_SW009_240412	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	116	73.0	129
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	101	72.0	129
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	101	72.0	129
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	108	72.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	106	71.0	133
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	120	69.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	95.3	71.0	129
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	88.5	69.0	133
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	106	72.0	134
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	126	65.0	144
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	88.1	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739011)							
EB2412387-002	0207_SW009_240412	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	89.1	67.0	137
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	104	68.0	141
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	114	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	72.0	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	128	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	112	65.0	136
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	107	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739011)							
EB2412387-002	0207_SW009_240412	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.469 µg/L	97.5	63.0	143
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.476 µg/L	103	64.0	140
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	91.8	67.0	138
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	71.8	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412387**	Page	: 1 of 9
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]	No. of samples received	: 39
Order number	: 60612563 2.1	No. of samples analysed	: 39

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2412387--024	0207_SD011_240412	**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	EB2412387--045	0207_SD010_240412	**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	EB2412387--045	0207_SD010_240412	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	51.3 %	59.0-134%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2412387--045	0207_SD010_240412	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	162 %	69.0-133%	**Recovery greater than upper data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2412387--045	0207_SD010_240412	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	31506-32-8	67.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2412387--045	0207_SD010_240412	**N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	24448-09-7	54.8 %	70.0-130%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2412387--045	0207_SD010_240412	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	42.4 %	70.0-130%	**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	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0207_SD024_240403, 0207_SD025_240403, 0207_SD107_240403, 0207_QC113_240403, 0207_QC114_240403, 0207_QC115_240403	**03-Apr-2024**	**----**	----	----	**17-Apr-2024**	17-Apr-2024	✓
HDPE Soil Jar (EA055)							
0207_SD022_240405, 0207_SD106_240405	**05-Apr-2024**	**----**	----	----	**17-Apr-2024**	19-Apr-2024	✓
HDPE Soil Jar (EA055)							
0207_SD007_240412, 0207_SD011_240412, 0207_SD013_240412, 0207_SD015_240412, 0207_SD016_240412, 0207_SD036_240412, 0207_SD037_240412, 0207_SD038_240412, 0207_SD040_240412, 0207_SD070_240412, 0207_SD102_240412, 0207_SD105_240412, 0207_SD010_240412	**12-Apr-2024**	**----**	----	----	**17-Apr-2024**	26-Apr-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0207_SD024_240403, 0207_SD025_240403, 0207_SD107_240403, 0207_QC113_240403, 0207_QC114_240403, 0207_QC115_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X)							
0207_SD022_240405, 0207_SD106_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X)							
0207_SD007_240412, 0207_SD011_240412, 0207_SD013_240412, 0207_SD015_240412, 0207_SD016_240412, 0207_SD036_240412, 0207_SD037_240412, 0207_SD038_240412, 0207_SD040_240412, 0207_SD070_240412, 0207_SD102_240412, 0207_SD105_240412	**12-Apr-2024**	**19-Apr-2024**	09-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X)							
0207_SD010_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0207_SD024_240403, 0207_SD025_240403, 0207_SD107_240403, 0207_QC113_240403, 0207_QC114_240403, 0207_QC115_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD022_240405, 0207_SD106_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD007_240412, 0207_SD011_240412, 0207_SD013_240412, 0207_SD015_240412, 0207_SD016_240412, 0207_SD036_240412, 0207_SD037_240412, 0207_SD038_240412, 0207_SD040_240412, 0207_SD070_240412, 0207_SD102_240412, 0207_SD105_240412	**12-Apr-2024**	**19-Apr-2024**	09-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD010_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0207_SD024_240403, 0207_SD025_240403, 0207_SD107_240403, 0207_QC113_240403, 0207_QC114_240403, 0207_QC115_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD022_240405, 0207_SD106_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD007_240412, 0207_SD011_240412, 0207_SD013_240412, 0207_SD015_240412, 0207_SD016_240412, 0207_SD036_240412, 0207_SD037_240412, 0207_SD038_240412, 0207_SD040_240412, 0207_SD070_240412, 0207_SD102_240412, 0207_SD105_240412	**12-Apr-2024**	**19-Apr-2024**	09-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD010_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0207_SD024_240403, 0207_SD025_240403, 0207_SD107_240403, 0207_QC113_240403, 0207_QC114_240403, 0207_QC115_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD022_240405, 0207_SD106_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD007_240412, 0207_SD011_240412, 0207_SD013_240412, 0207_SD015_240412, 0207_SD016_240412, 0207_SD036_240412, 0207_SD037_240412, 0207_SD038_240412, 0207_SD040_240412, 0207_SD070_240412, 0207_SD102_240412, 0207_SD105_240412	**12-Apr-2024**	**19-Apr-2024**	09-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD010_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	30-May-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0207_SD024_240403, 0207_SD025_240403, 0207_SD107_240403, 0207_QC113_240403, 0207_QC114_240403, 0207_QC115_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD022_240405, 0207_SD106_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD007_240412, 0207_SD011_240412, 0207_SD013_240412, 0207_SD015_240412, 0207_SD016_240412, 0207_SD036_240412, 0207_SD037_240412, 0207_SD038_240412, 0207_SD040_240412, 0207_SD070_240412, 0207_SD102_240412, 0207_SD105_240412	**12-Apr-2024**	**19-Apr-2024**	09-Oct-2024	✓	**19-Apr-2024**	29-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD010_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	30-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

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-INJ)							
0207_SW024_240403, 0207_QC113_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_SW065_240405, 0207_SW066_240405, 0207_QC111_240405, 0207_QC112_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_SW004_240412, 0207_SW009_240412, 0207_SW010_240412, 0207_SW011_240412, 0207_SW012_240412, 0207_SW013_240412, 0207_SW025_240412, 0207_SW026_240412, 0207_SW027_240412, 0207_SW028_240412, 0207_SW040_240412, 0207_SW043_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0207_SW024_240403, 0207_QC113_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_SW065_240405, 0207_SW066_240405, 0207_QC111_240405, 0207_QC112_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_SW004_240412, 0207_SW009_240412, 0207_SW010_240412, 0207_SW011_240412, 0207_SW012_240412, 0207_SW013_240412, 0207_SW025_240412, 0207_SW026_240412, 0207_SW027_240412, 0207_SW028_240412, 0207_SW040_240412, 0207_SW043_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X-INJ)							
0207_SW024_240403, 0207_QC113_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_SW065_240405, 0207_SW066_240405, 0207_QC111_240405, 0207_QC112_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ)							
0207_SW004_240412, 0207_SW009_240412, 0207_SW010_240412, 0207_SW011_240412, 0207_SW012_240412, 0207_SW013_240412, 0207_SW025_240412, 0207_SW026_240412, 0207_SW027_240412, 0207_SW028_240412, 0207_SW040_240412, 0207_SW043_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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-INJ) 0207_SW024_240403, 0207_QC113_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW065_240405, 0207_SW066_240405, 0207_QC111_240405, 0207_QC112_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW004_240412, 0207_SW009_240412, 0207_SW010_240412, 0207_SW011_240412, 0207_SW012_240412, 0207_SW013_240412, 0207_SW025_240412, 0207_SW026_240412, 0207_SW027_240412, 0207_SW028_240412, 0207_SW040_240412, 0207_SW043_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X-INJ) 0207_SW024_240403, 0207_QC113_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW065_240405, 0207_SW066_240405, 0207_QC111_240405, 0207_QC112_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW004_240412, 0207_SW009_240412, 0207_SW010_240412, 0207_SW011_240412, 0207_SW012_240412, 0207_SW013_240412, 0207_SW025_240412, 0207_SW026_240412, 0207_SW027_240412, 0207_SW028_240412, 0207_SW040_240412, 0207_SW043_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-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: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	25	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	25	**8.00**	**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	12	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, 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 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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	: **EB2412403**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: + [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 4
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 26-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 68 / 68

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
- ***SRN Reissued 26/04/2024: As per the email fro J [redacted] 26/04/2024, sample 0207_MW281_240411 (ALS #041) will be split into a separate COA.***
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples QC201, QC200, QC202, QC203, QC204, QC205, QC206, QC207, QC208, QC209 have been forwarded to NMI , as requested. Please note that this will incur a freight forwarding fee.**
- 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.
- **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.**

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)	WATER - EP231X-INJ PFAS - Full Suite (31 analytes)
EB2412403-001	02-Apr-2024 00:00	0207_MW167_240402	✓	
EB2412403-002	02-Apr-2024 00:00	0207_MW172_240402	✓	
EB2412403-003	02-Apr-2024 00:00	0207_MW173_240402	✓	
EB2412403-004	03-Apr-2024 00:00	0207_MW174_240403	✓	
EB2412403-005	03-Apr-2024 00:00	0207_MW178_240403	✓	
EB2412403-006	03-Apr-2024 00:00	0207_MW179_240403	✓	
EB2412403-007	03-Apr-2024 00:00	0207_MW187_240403	✓	
EB2412403-008	03-Apr-2024 00:00	0207_MW189_240403	✓	
EB2412403-009	02-Apr-2024 00:00	0207_MW193_240402	✓	
EB2412403-010	02-Apr-2024 00:00	0207_MW198_240402	✓	
EB2412403-011	02-Apr-2024 00:00	0207_MW201_240402	✓	
EB2412403-012	02-Apr-2024 00:00	0207_MW202_240402	✓	
EB2412403-013	02-Apr-2024 00:00	0207_MW203_240402	✓	
EB2412403-014	02-Apr-2024 00:00	0207_MW204_240402	✓	
EB2412403-015	02-Apr-2024 00:00	0207_MW205_240402	✓	
EB2412403-016	02-Apr-2024 00:00	0207_MW207_240402	✓	
EB2412403-017	02-Apr-2024 00:00	0207_MW221_240402	✓	
EB2412403-018	03-Apr-2024 00:00	0207_MW222_240403	✓	
EB2412403-019	03-Apr-2024 00:00	0207_MW223_240403	✓	
EB2412403-020	03-Apr-2024 00:00	0207_MW229_240403	✓	
EB2412403-021	03-Apr-2024 00:00	0207_MW230_240403	✓	
EB2412403-022	03-Apr-2024 00:00	0207_MW232_240403	✓	
EB2412403-023	03-Apr-2024 00:00	0207_MW233_240403	✓	
EB2412403-024	04-Apr-2024 00:00	0207_MW235_240404	✓	
EB2412403-025	04-Apr-2024 00:00	0207_MW236_240404	✓	
EB2412403-026	04-Apr-2024 00:00	0207_MW241_240404	✓	
EB2412403-027	05-Apr-2024 00:00	0207_MW242_240405	✓	
EB2412403-028	05-Apr-2024 00:00	0207_MW245_240405	✓	
EB2412403-029	04-Apr-2024 00:00	0207_MW249_240404	✓	
EB2412403-030	04-Apr-2024 00:00	0207_MW252_240404	✓	
EB2412403-031	10-Apr-2024 00:00	0207_MW255_240410	✓	
EB2412403-032	10-Apr-2024 00:00	0207_MW257_240410	✓	
EB2412403-033	11-Apr-2024 00:00	0207_MW262_240411	✓	
EB2412403-034	11-Apr-2024 00:00	0207_MW265_240411	✓	
EB2412403-035	11-Apr-2024 00:00	0207_MW266_240411	✓	

			WATER - EP231X PFAS - Full Suite (30 analytes)	WATER - EP231X-INJ PFAS - Full Suite (31 analytes)
EB2412403-036	08-Apr-2024 00:00	0207_MW273_240408	✓	
EB2412403-037	11-Apr-2024 00:00	0207_MW274_240411		✓
EB2412403-038	11-Apr-2024 00:00	0207_MW275_240411	✓	
EB2412403-039	11-Apr-2024 00:00	0207_MW278_240411	✓	
EB2412403-040	11-Apr-2024 00:00	0207_MW280_240411	✓	
EB2412403-041	11-Apr-2024 00:00	0207_MW281_240411	✓	
EB2412403-042	11-Apr-2024 00:00	0207_MW282_240411	✓	
EB2412403-043	11-Apr-2024 00:00	0207_MW285_240411	✓	
EB2412403-044	08-Apr-2024 00:00	0207_MW272_240408	✓	
EB2412403-045	11-Apr-2024 00:00	0207_MW276_240411	✓	
EB2412403-046	02-Apr-2024 00:00	0207_MW299_240402	✓	
EB2412403-047	02-Apr-2024 00:00	0207_MW300_240402	✓	
EB2412403-048	04-Apr-2024 00:00	0207_MW562_240404	✓	
EB2412403-049	04-Apr-2024 00:00	0207_MW563_240404	✓	
EB2412403-050	03-Apr-2024 00:00	0207_QC101_240403	✓	
EB2412403-052	02-Apr-2024 00:00	0207_QC100_240402	✓	
EB2412403-054	03-Apr-2024 00:00	0207_QC102_240403	✓	
EB2412403-056	03-Apr-2024 00:00	0207_QC103_240403	✓	
EB2412403-058	03-Apr-2024 00:00	0207_QC104_240403	✓	
EB2412403-060	04-Apr-2024 00:00	0207_QC105_240404	✓	
EB2412403-062	04-Apr-2024 00:00	0207_QC106_240404	✓	
EB2412403-064	04-Apr-2024 00:00	0207_QC107_240404	✓	
EB2412403-066	04-Apr-2024 00:00	0207_QC108_240404	✓	
EB2412403-068	04-Apr-2024 00:00	0207_QC109_240404	✓	
EB2412403-070	02-Apr-2024 00:00	0207_QC300_240402	✓	
EB2412403-071	03-Apr-2024 00:00	0207_QC301_240403	✓	
EB2412403-072	04-Apr-2024 00:00	0207_QC302_240404	✓	
EB2412403-073	05-Apr-2024 00:00	0207_QC303_240405	✓	
EB2412403-074	08-Apr-2024 00:00	0207_QC304_240408	✓	
EB2412403-075	09-Apr-2024 00:00	0207_QC305_240409	✓	
EB2412403-076	10-Apr-2024 00:00	0207_QC306_240410	✓	
EB2412403-077	11-Apr-2024 00:00	0207_QC307_240411	✓	
EB2412403-078	12-Apr-2024 00:00	0207_QC308_240412	✓	

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412403-AA**	Page	: 1 of 33
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	: [redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: + [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 26-Apr-2024 11:55
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 67		
No. of samples analysed	: 67		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (26/04/2024): This report has been amended as a result of a request from James Peachey via email on 26/04/2024 to split ALS #041 into a separate COA. All analysis results are as per the previous report.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration 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.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW167_240402	0207_MW172_240402	0207_MW173_240402	0207_MW174_240403	0207_MW178_240403
				Sampling date / time	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-001	EB2412403-002	EB2412403-003	EB2412403-004	EB2412403-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.46**	**0.46**	**0.26**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.41**	**0.45**	**0.26**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**2.20**	**2.68**	**2.14**	**0.01**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.21**	**0.18**	**0.12**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.51**	**6.83**	**1.98**	**0.02**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.2**	**0.7**	**0.3**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.23**	**3.07**	**0.98**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.90**	**1.44**	**1.09**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.15**	**0.80**	**0.51**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.29**	**0.62**	**0.45**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.08**	**0.09**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	**0.03**	<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	0207_MW167_240402	0207_MW172_240402	0207_MW173_240402	0207_MW174_240403	0207_MW178_240403
				Sampling date / time	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-001	EB2412403-002	EB2412403-003	EB2412403-004	EB2412403-005
					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	**1.20**	**0.17**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	**0.57**	<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		**9.75**	**19.3**	**8.45**	**0.03**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**6.71**	**9.51**	**4.12**	**0.03**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**8.94**	**18.4**	**7.88**	**0.03**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.4**	**103**	**102**	**97.9**	**98.1**
13C8-PFOA	----	0.02	%		**102**	**106**	**101**	**104**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW179_240403	0207_MW187_240403	0207_MW189_240403	0207_MW193_240402	0207_MW198_240402
				Sampling date / time	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-006	EB2412403-007	EB2412403-008	EB2412403-009	EB2412403-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.42**	**0.03**	<0.02	**1.75**	**0.26**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.33**	**0.04**	<0.02	**1.93**	**0.24**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.88**	**0.33**	**0.06**	**11.0**	**2.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.17**	<0.02	<0.02	**0.74**	**0.30**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.63**	**0.18**	**0.05**	**11.3**	**9.13**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.2**	<0.1	<0.1	**6.3**	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.22**	<0.02	<0.02	**1.15**	**0.33**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.03**	**0.05**	<0.02	**4.38**	**0.64**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.19**	<0.02	<0.02	**1.05**	**0.20**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.31**	**0.01**	<0.01	**1.46**	**0.34**
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	0207_MW179_240403	0207_MW187_240403	0207_MW189_240403	0207_MW193_240402	0207_MW198_240402
				Sampling date / time	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-006	EB2412403-007	EB2412403-008	EB2412403-009	EB2412403-010
					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		**7.51**	**0.64**	**0.11**	**41.8**	**13.8**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.51**	**0.51**	**0.11**	**22.3**	**11.2**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.88**	**0.60**	**0.11**	**38.4**	**13.1**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**101**	**105**	**98.0**	**98.4**
13C8-PFOA	----	0.02	%		**102**	**104**	**99.5**	**102**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW201_240402	0207_MW202_240402	0207_MW203_240402	0207_MW204_240402	0207_MW205_240402
				Sampling date / time	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-011	EB2412403-012	EB2412403-013	EB2412403-014	EB2412403-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**9.34**	**11.9**	**0.64**	**71.1**	**1.44**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**10.1**	**12.0**	**0.64**	**86.7**	**1.38**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**67.9**	**96.7**	**4.54**	**596**	**6.74**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**4.94**	**7.87**	**0.10**	**28.6**	**0.19**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.09**	**273**	**0.56**	**302**	**5.56**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	**0.13**	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.9**	**2.4**	**0.2**	**14.6**	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**3.07**	**4.71**	**0.28**	**20.9**	**0.60**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**12.9**	**20.1**	**0.97**	**93.6**	**2.22**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**2.33**	**3.18**	**0.12**	**15.6**	**0.22**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**5.80**	**8.53**	**0.13**	**31.9**	**0.17**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.20**	<0.02	**0.21**	<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	**0.34**	<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	0207_MW201_240402	0207_MW202_240402	0207_MW203_240402	0207_MW204_240402	0207_MW205_240402
				Sampling date / time	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-011	EB2412403-012	EB2412403-013	EB2412403-014	EB2412403-015
					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		**0.48**	**1.28**	<0.05	**1.40**	<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		**127**	**447**	**8.46**	**1300**	**19.5**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**72.0**	**370**	**5.10**	**898**	**12.3**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**108**	**422**	**7.44**	**1150**	**17.2**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.3**	**66.2**	**97.1**	**95.0**	**95.5**
13C8-PFOA	----	0.02	%		**101**	**98.8**	**101**	**96.7**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW207_240402	0207_MW221_240402	0207_MW222_240403	0207_MW223_240403	0207_MW229_240403
				Sampling date / time	02-Apr-2024 00:00	02-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-016	EB2412403-017	EB2412403-018	EB2412403-019	EB2412403-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.12**	**0.25**	**0.41**	**0.54**	**0.55**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.12**	**0.24**	**0.43**	**0.65**	**0.64**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.97**	**1.45**	**3.21**	**5.16**	**8.08**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.04**	**0.10**	**0.42**	**0.50**	**0.59**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.62**	**1.75**	**14.9**	**12.2**	**31.6**
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**	**0.6**	**4.6**	**0.1**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.06**	**0.19**	**1.33**	**26.6**	**0.26**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.14**	**0.63**	**1.73**	**12.9**	**1.56**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	**0.18**	**0.88**	**10.0**	**0.14**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.04**	**0.26**	**1.30**	**5.90**	**0.51**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	**0.40**	**0.81**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	**0.03**	**0.04**	<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**	**0.03**	<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	0207_MW207_240402	0207_MW221_240402	0207_MW222_240403	0207_MW223_240403	0207_MW229_240403
				Sampling date / time	02-Apr-2024 00:00	02-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-016	EB2412403-017	EB2412403-018	EB2412403-019	EB2412403-020
					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	**0.47**	**3.57**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	**0.10**	**0.30**	<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		**2.21**	**5.23**	**26.4**	**84.0**	**44.4**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.59**	**3.20**	**18.1**	**17.4**	**39.7**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.00**	**4.81**	**24.9**	**81.8**	**42.8**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**103**	**101**	**101**	**104**
13C8-PFOA	----	0.02	%		**102**	**101**	**100**	**104**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW230_240403	0207_MW232_240403	0207_MW233_240403	0207_MW235_240404	0207_MW236_240404
				Sampling date / time	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-021	EB2412403-022	EB2412403-023	EB2412403-024	EB2412403-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.29**	**0.12**	**0.08**	**3.84**	**1.64**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.31**	**0.10**	**0.06**	**2.83**	**1.15**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.92**	**0.97**	**0.48**	**6.41**	**4.18**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.14**	**0.10**	<0.02	**0.18**	**0.13**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**3.42**	**7.24**	**0.19**	**4.63**	**0.84**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.9**	**0.2**	<0.1	**1.2**	**0.6**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**6.57**	**0.76**	**0.03**	**1.63**	**0.65**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**4.08**	**0.54**	**0.09**	**6.14**	**2.81**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**2.51**	**0.49**	<0.02	**0.33**	**0.28**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.54**	**0.46**	**0.03**	**0.24**	**0.38**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.34**	**0.18**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	**0.21**	<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	**0.04**	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW230_240403	0207_MW232_240403	0207_MW233_240403	0207_MW235_240404	0207_MW236_240404
				Sampling date / time	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-021	EB2412403-022	EB2412403-023	EB2412403-024	EB2412403-025
					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		**0.72**	<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	**1.06**	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**23.8**	**12.6**	**0.98**	**29.4**	**13.2**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**5.34**	**8.21**	**0.67**	**11.0**	**5.02**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**23.0**	**11.8**	**0.90**	**24.4**	**11.4**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**107**	**88.7**	**88.0**	**93.1**	**84.6**
13C8-PFOA	----	0.02	%		**100**	**100**	**103**	**102**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW241_240404	0207_MW242_240405	0207_MW245_240405	0207_MW249_240404	0207_MW252_240404
				Sampling date / time	04-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-026	EB2412403-027	EB2412403-028	EB2412403-029	EB2412403-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.08**	<0.02	**0.03**	**0.68**	**0.79**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.09**	<0.02	**0.02**	**0.76**	**0.74**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.79**	<0.01	**0.14**	**3.33**	**3.33**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.08**	<0.02	<0.02	**0.05**	**0.20**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.19**	<0.01	**0.08**	**0.19**	**11.3**
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	**0.2**	**0.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.04**	<0.02	<0.02	**0.44**	**0.75**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.13**	<0.02	**0.04**	**1.39**	**1.18**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	<0.02	<0.02	**0.17**	**0.33**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.09**	<0.01	<0.01	**0.11**	**0.45**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
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	0207_MW241_240404	0207_MW242_240405	0207_MW245_240405	0207_MW249_240404	0207_MW252_240404
				Sampling date / time	04-Apr-2024 00:00	05-Apr-2024 00:00	05-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-026	EB2412403-027	EB2412403-028	EB2412403-029	EB2412403-030
					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		**5.52**	<0.01	**0.31**	**7.58**	**19.8**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.98**	<0.01	**0.22**	**3.52**	**14.6**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**5.35**	<0.01	**0.29**	**6.51**	**18.5**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**92.1**	**92.1**	**93.2**	**91.2**	**95.0**
13C8-PFOA	----	0.02	%		**100**	**101**	**101**	**100**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW255_240410	0207_MW257_240410	0207_MW262_240411	0207_MW265_240411	0207_MW266_240411
				Sampling date / time	10-Apr-2024 00:00	10-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-031	EB2412403-032	EB2412403-033	EB2412403-034	EB2412403-035
					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	**0.43**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.04**	<0.02	**0.39**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.13**	**0.09**	**0.20**	<0.01	**2.19**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.16**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.10**	**0.11**	**0.16**	<0.01	**2.93**
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	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.22**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.02**	<0.02	**0.05**	<0.02	**0.86**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.15**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.02**	<0.01	**0.23**
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	0207_MW255_240410	0207_MW257_240410	0207_MW262_240411	0207_MW265_240411	0207_MW266_240411
				Sampling date / time	10-Apr-2024 00:00	10-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-031	EB2412403-032	EB2412403-033	EB2412403-034	EB2412403-035
					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		**0.27**	**0.20**	**0.52**	<0.01	**7.90**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.23**	**0.20**	**0.36**	<0.01	**5.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.27**	**0.20**	**0.48**	<0.01	**7.21**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**104**	**91.9**	**95.6**	**97.6**	**94.3**
13C8-PFOA	----	0.02	%		**103**	**102**	**103**	**104**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW273_240408	0207_MW274_240411	0207_MW275_240411	0207_MW278_240411	0207_MW280_240411
				Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-036	EB2412403-037	EB2412403-038	EB2412403-039	EB2412403-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	<0.01	----	----	----
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	----	----	----
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	**0.08**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	<0.01	<0.01	**0.08**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	<0.10	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW273_240408	0207_MW274_240411	0207_MW275_240411	0207_MW278_240411	0207_MW280_240411
				Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-036	EB2412403-037	EB2412403-038	EB2412403-039	EB2412403-040
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
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	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0207_MW273_240408	0207_MW274_240411	0207_MW275_240411	0207_MW278_240411	0207_MW280_240411
			Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	EB2412403-036	EB2412403-037	EB2412403-038	EB2412403-039	EB2412403-040
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
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	----	----	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05
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	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW273_240408	0207_MW274_240411	0207_MW275_240411	0207_MW278_240411	0207_MW280_240411
				Sampling date / time	08-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00	11-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-036	EB2412403-037	EB2412403-038	EB2412403-039	EB2412403-040
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
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	----	----	----
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	----	----	----
Sum of PFAS	----	0.01	µg/L		<0.01	----	<0.01	<0.01	**0.16**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	<0.01	<0.01	**0.16**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	<0.01	<0.01	**0.16**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**85.5**	----	**94.0**	**90.9**	**92.3**
13C4-PFOS	----	0.02	%		----	**99.0**	----	----	----
13C8-PFOA	----	0.02	%		**103**	----	**103**	**101**	**101**
13C8-PFOA	----	0.02	%		----	**102**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW282_240411	0207_MW285_240411	0207_MW272_240408	0207_MW276_240411	0207_MW299_240402
				Sampling date / time	11-Apr-2024 00:00	11-Apr-2024 00:00	08-Apr-2024 00:00	11-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-042	EB2412403-043	EB2412403-044	EB2412403-045	EB2412403-046
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.02**	<0.02	**0.05**	**0.52**	**1.98**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	<0.02	**0.06**	**0.71**	**1.91**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.28**	<0.01	**0.33**	**5.91**	**8.92**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.37**	**0.65**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.68**	<0.01	**0.11**	**9.22**	**28.2**
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	**0.2**	**0.7**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.24**	**1.34**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.08**	**1.17**	**4.70**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.18**	**0.96**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.01**	**0.38**	**1.79**
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	0207_MW282_240411	0207_MW285_240411	0207_MW272_240408	0207_MW276_240411	0207_MW299_240402
				Sampling date / time	11-Apr-2024 00:00	11-Apr-2024 00:00	08-Apr-2024 00:00	11-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-042	EB2412403-043	EB2412403-044	EB2412403-045	EB2412403-046
					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	**0.06**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
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		**1.00**	<0.01	**0.66**	**19.1**	**51.7**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.96**	<0.01	**0.44**	**15.1**	**37.1**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.98**	<0.01	**0.58**	**17.8**	**48.6**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**102**	**103**	**97.4**	**109**
13C8-PFOA	----	0.02	%		**103**	**101**	**103**	**98.3**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW300_240402	0207_MW562_240404	0207_MW563_240404	0207_QC101_240403	0207_QC100_240402
				Sampling date / time	02-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	03-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-047	EB2412403-048	EB2412403-049	EB2412403-050	EB2412403-052
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**3.21**	**0.06**	**2.26**	<0.02	**1.29**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**3.16**	**0.05**	**2.57**	<0.02	**1.28**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**17.8**	**0.17**	**15.9**	**0.01**	**6.60**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**2.48**	<0.02	**0.25**	<0.02	**0.18**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**45.2**	**0.04**	**0.71**	**0.02**	**4.98**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.3**	<0.1	**0.6**	<0.1	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**2.06**	**0.09**	**1.02**	<0.02	**0.66**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**7.24**	**0.12**	**4.15**	<0.02	**2.46**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.83**	<0.02	**0.72**	<0.02	**0.23**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**5.11**	**0.02**	**0.82**	<0.01	**0.18**
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	0207_MW300_240402	0207_MW562_240404	0207_MW563_240404	0207_QC101_240403	0207_QC100_240402
				Sampling date / time	02-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	03-Apr-2024 00:00	02-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-047	EB2412403-048	EB2412403-049	EB2412403-050	EB2412403-052
					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		**0.09**	<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		**90.2**	**0.59**	**29.8**	**0.03**	**18.8**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**63.0**	**0.21**	**16.6**	**0.03**	**11.6**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**83.8**	**0.50**	**26.2**	**0.03**	**16.7**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**89.2**	**95.7**	**85.0**	**86.6**	**100**
13C8-PFOA	----	0.02	%		**96.5**	**105**	**89.3**	**93.0**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC102_240403	0207_QC103_240403	0207_QC104_240403	0207_QC105_240404	0207_QC106_240404
				Sampling date / time	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-054	EB2412403-056	EB2412403-058	EB2412403-060	EB2412403-062
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.47**	**0.26**	**0.08**	**0.71**	**0.08**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.58**	**0.33**	**0.08**	**0.86**	**0.09**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**6.76**	**2.11**	**0.59**	**4.43**	**0.89**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.58**	**0.14**	<0.02	**0.25**	**0.10**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**27.3**	**2.73**	**0.17**	**11.5**	**4.08**
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**	**1.8**	<0.1	**0.3**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.27**	**6.76**	**0.03**	**0.77**	**0.05**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.72**	**4.44**	**0.09**	**1.37**	**0.14**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.14**	**2.47**	<0.02	**0.35**	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.52**	**1.51**	**0.03**	**0.45**	**0.09**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.31**	<0.02	**0.03**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC102_240403	0207_QC103_240403	0207_QC104_240403	0207_QC105_240404	0207_QC106_240404
				Sampling date / time	03-Apr-2024 00:00	03-Apr-2024 00:00	03-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-054	EB2412403-056	EB2412403-058	EB2412403-060	EB2412403-062
					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	**0.68**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	**0.06**	<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		**38.8**	**23.7**	**1.09**	**21.3**	**5.55**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**34.1**	**4.84**	**0.76**	**15.9**	**4.97**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**37.3**	**22.8**	**0.99**	**19.9**	**5.36**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**104**	**97.2**	**97.3**	**115**	**90.9**
13C8-PFOA	----	0.02	%		**104**	**95.0**	**102**	**101**	**92.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC107_240404	0207_QC108_240404	0207_QC109_240404	0207_QC300_240402	0207_QC301_240403
				Sampling date / time	04-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	02-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-064	EB2412403-066	EB2412403-068	EB2412403-070	EB2412403-071
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.46**	**0.70**	**2.16**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.21**	**0.92**	**2.57**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**4.51**	**4.13**	**16.4**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.11**	**0.05**	**0.24**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.68**	**0.17**	**0.62**	<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		**0.6**	**0.2**	**0.6**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.70**	**0.47**	**1.00**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.85**	**1.54**	**4.06**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.25**	**0.19**	**0.66**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.34**	**0.12**	**0.72**	<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	0207_QC107_240404	0207_QC108_240404	0207_QC109_240404	0207_QC300_240402	0207_QC301_240403
				Sampling date / time	04-Apr-2024 00:00	04-Apr-2024 00:00	04-Apr-2024 00:00	02-Apr-2024 00:00	03-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-064	EB2412403-066	EB2412403-068	EB2412403-070	EB2412403-071
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**13.3**	**8.77**	**29.8**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**5.19**	**4.30**	**17.0**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**11.4**	**7.52**	**26.2**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**89.5**	**102**	**113**	**101**
13C8-PFOA	----	0.02	%		**98.6**	**97.5**	**103**	**103**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC302_240404	0207_QC303_240405	0207_QC304_240408	0207_QC305_240409	0207_QC306_240410
				Sampling date / time	04-Apr-2024 00:00	05-Apr-2024 00:00	08-Apr-2024 00:00	09-Apr-2024 00:00	10-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-072	EB2412403-073	EB2412403-074	EB2412403-075	EB2412403-076
					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: WATER (Matrix: WATER)				Sample ID	0207_QC302_240404	0207_QC303_240405	0207_QC304_240408	0207_QC305_240409	0207_QC306_240410
				Sampling date / time	04-Apr-2024 00:00	05-Apr-2024 00:00	08-Apr-2024 00:00	09-Apr-2024 00:00	10-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412403-072	EB2412403-073	EB2412403-074	EB2412403-075	EB2412403-076
					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	%		**98.3**	**124**	**102**	**124**	**110**
13C8-PFOA	----	0.02	%		**102**	**104**	**126**	**99.9**	**110**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC307_240411	0207_QC308_240412	----	----	----
				Sampling date / time	11-Apr-2024 00:00	12-Apr-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2412403-077	EB2412403-078	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_QC307_240411	0207_QC308_240412	----	----	----
				Sampling date / time	11-Apr-2024 00:00	12-Apr-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2412403-077	EB2412403-078	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.8**	**93.1**	----	----	----
13C8-PFOA	----	0.02	%		**88.7**	**103**	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

QUALITY CONTROL REPORT

Work Order	: **EB2412403-AA**	Page	: 1 of 11
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 26-Apr-2024
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 67		
No. of samples analysed	: 67		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5739031)									
EB2412378-003	Anonymous	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: 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: 5739031)									
EB2412378-003	Anonymous	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	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 (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5739031) - continued									
EB2412378-003	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5739031)									
EB2412378-003	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 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: 5739031)									
EB2412378-003	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 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: 5739031)									
EB2412378-003	Anonymous	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5737389)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	89.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	99.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.2	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	99.0	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	87.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5737809)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	83.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	97.6	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	102	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	86.9	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739000)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	87.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	95.5	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	100	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	97.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	96.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	93.2	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739002)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	96.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	109	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	81.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	84.5	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	80.2	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739031)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	98.5	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.471 µg/L	100	71.0	127

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
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5739031) - continued								
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.457 µg/L	99.2	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	104	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.465 µg/L	101	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.482 µg/L	100	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5737389)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	90.3	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.9	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	93.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.2	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	104	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5737809)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	96.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	93.1	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	96.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	97.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	97.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	87.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	92.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	96.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739000)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	98.5	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	95.5	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	92.0	71.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739000) - continued								
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.3	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	79.7	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	87.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	90.1	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	90.0	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739002)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	88.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	99.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	90.6	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	93.9	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	92.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739031)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	96.3	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	97.5	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	95.9	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	98.2	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	102	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	101	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	97.5	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	99.6	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	107	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	111	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5737389)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	96.1	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	99.2	70.0	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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5737389) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	96.2	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.6	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	99.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	96.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5737809)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	97.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	98.0	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	90.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.6	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	98.7	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739000)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.7	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	96.6	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	70.6	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	84.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	78.3	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739002)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	86.9	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	108	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	78.3	70.0	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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739002) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	89.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.4	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	87.9	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739031)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	97.4	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	101	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	97.4	70.0	130
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	101	70.0	130
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	99.2	70.0	130
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	104	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	96.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5737389)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	90.4	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	96.4	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	73.1	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5737809)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	75.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	97.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	81.7	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739000)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	91.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	89.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	100	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	91.0	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739002)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	94.6	63.0	143

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: 5739002) - continued								
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	92.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	93.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739031)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	99.1	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	110	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	100	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	89.4	70.0	130
EP231P: PFAS Sums (QCLot: 5737389)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5737809)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5739000)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5739002)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5739031)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				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: 5739031)							
EB2412403-037	0207_MW274_240411	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.444 µg/L	106	72.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.471 µg/L	102	71.0	127
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.457 µg/L	105	68.0	131
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	104	69.0	134
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.465 µg/L	99.1	65.0	140
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	93.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5739031)							
EB2412403-037	0207_MW274_240411	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	87.6	73.0	129
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	102	72.0	129
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	103	72.0	129
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	101	72.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	106	71.0	133
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	100	69.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	102	71.0	129
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	99.9	69.0	133
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	110	72.0	134
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	114	65.0	144
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5739031)							
EB2412403-037	0207_MW274_240411	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	103	67.0	137
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	106	68.0	141
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	103	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	104	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	102	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	103	65.0	136
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	100	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5739031)							
EB2412403-037	0207_MW274_240411	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.469 µg/L	95.6	63.0	143
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.476 µg/L	105	64.0	140
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	104	67.0	138
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	90.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412403**	Page	: 1 of 13
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 26-Apr-2024
Sampler	: [redacted]	No. of samples received	: 68
Order number	: 60612563 2.1	No. of samples analysed	: 68

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	72	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	72	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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued							
0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-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	72	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	72	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**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.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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	: **EB2412403**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 4
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 26-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 68 / 68

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
- ***SRN Reissued 26/04/2024: As per the email fro [redacted] 26/04/2024, sample 0207_MW281_240411 (ALS #041) will be split into a separate COA.***
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples QC201, QC200, QC202, QC203, QC204, QC205, QC206, QC207, QC208, QC209 have been forwarded to NMI , as requested. Please note that this will incur a freight forwarding fee.**
- 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.
- **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.**

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)	WATER - EP231X-INJ PFAS - Full Suite (31 analytes)
EB2412403-001	02-Apr-2024 00:00	0207_MW167_240402	✓	
EB2412403-002	02-Apr-2024 00:00	0207_MW172_240402	✓	
EB2412403-003	02-Apr-2024 00:00	0207_MW173_240402	✓	
EB2412403-004	03-Apr-2024 00:00	0207_MW174_240403	✓	
EB2412403-005	03-Apr-2024 00:00	0207_MW178_240403	✓	
EB2412403-006	03-Apr-2024 00:00	0207_MW179_240403	✓	
EB2412403-007	03-Apr-2024 00:00	0207_MW187_240403	✓	
EB2412403-008	03-Apr-2024 00:00	0207_MW189_240403	✓	
EB2412403-009	02-Apr-2024 00:00	0207_MW193_240402	✓	
EB2412403-010	02-Apr-2024 00:00	0207_MW198_240402	✓	
EB2412403-011	02-Apr-2024 00:00	0207_MW201_240402	✓	
EB2412403-012	02-Apr-2024 00:00	0207_MW202_240402	✓	
EB2412403-013	02-Apr-2024 00:00	0207_MW203_240402	✓	
EB2412403-014	02-Apr-2024 00:00	0207_MW204_240402	✓	
EB2412403-015	02-Apr-2024 00:00	0207_MW205_240402	✓	
EB2412403-016	02-Apr-2024 00:00	0207_MW207_240402	✓	
EB2412403-017	02-Apr-2024 00:00	0207_MW221_240402	✓	
EB2412403-018	03-Apr-2024 00:00	0207_MW222_240403	✓	
EB2412403-019	03-Apr-2024 00:00	0207_MW223_240403	✓	
EB2412403-020	03-Apr-2024 00:00	0207_MW229_240403	✓	
EB2412403-021	03-Apr-2024 00:00	0207_MW230_240403	✓	
EB2412403-022	03-Apr-2024 00:00	0207_MW232_240403	✓	
EB2412403-023	03-Apr-2024 00:00	0207_MW233_240403	✓	
EB2412403-024	04-Apr-2024 00:00	0207_MW235_240404	✓	
EB2412403-025	04-Apr-2024 00:00	0207_MW236_240404	✓	
EB2412403-026	04-Apr-2024 00:00	0207_MW241_240404	✓	
EB2412403-027	05-Apr-2024 00:00	0207_MW242_240405	✓	
EB2412403-028	05-Apr-2024 00:00	0207_MW245_240405	✓	
EB2412403-029	04-Apr-2024 00:00	0207_MW249_240404	✓	
EB2412403-030	04-Apr-2024 00:00	0207_MW252_240404	✓	
EB2412403-031	10-Apr-2024 00:00	0207_MW255_240410	✓	
EB2412403-032	10-Apr-2024 00:00	0207_MW257_240410	✓	
EB2412403-033	11-Apr-2024 00:00	0207_MW262_240411	✓	
EB2412403-034	11-Apr-2024 00:00	0207_MW265_240411	✓	
EB2412403-035	11-Apr-2024 00:00	0207_MW266_240411	✓	

			WATER - EP231X PFAS - Full Suite (30 analytes)	WATER - EP231X-INJ PFAS - Full Suite (31 analytes)
EB2412403-036	08-Apr-2024 00:00	0207_MW273_240408	✓	
EB2412403-037	11-Apr-2024 00:00	0207_MW274_240411		✓
EB2412403-038	11-Apr-2024 00:00	0207_MW275_240411	✓	
EB2412403-039	11-Apr-2024 00:00	0207_MW278_240411	✓	
EB2412403-040	11-Apr-2024 00:00	0207_MW280_240411	✓	
EB2412403-041	11-Apr-2024 00:00	0207_MW281_240411	✓	
EB2412403-042	11-Apr-2024 00:00	0207_MW282_240411	✓	
EB2412403-043	11-Apr-2024 00:00	0207_MW285_240411	✓	
EB2412403-044	08-Apr-2024 00:00	0207_MW272_240408	✓	
EB2412403-045	11-Apr-2024 00:00	0207_MW276_240411	✓	
EB2412403-046	02-Apr-2024 00:00	0207_MW299_240402	✓	
EB2412403-047	02-Apr-2024 00:00	0207_MW300_240402	✓	
EB2412403-048	04-Apr-2024 00:00	0207_MW562_240404	✓	
EB2412403-049	04-Apr-2024 00:00	0207_MW563_240404	✓	
EB2412403-050	03-Apr-2024 00:00	0207_QC101_240403	✓	
EB2412403-052	02-Apr-2024 00:00	0207_QC100_240402	✓	
EB2412403-054	03-Apr-2024 00:00	0207_QC102_240403	✓	
EB2412403-056	03-Apr-2024 00:00	0207_QC103_240403	✓	
EB2412403-058	03-Apr-2024 00:00	0207_QC104_240403	✓	
EB2412403-060	04-Apr-2024 00:00	0207_QC105_240404	✓	
EB2412403-062	04-Apr-2024 00:00	0207_QC106_240404	✓	
EB2412403-064	04-Apr-2024 00:00	0207_QC107_240404	✓	
EB2412403-066	04-Apr-2024 00:00	0207_QC108_240404	✓	
EB2412403-068	04-Apr-2024 00:00	0207_QC109_240404	✓	
EB2412403-070	02-Apr-2024 00:00	0207_QC300_240402	✓	
EB2412403-071	03-Apr-2024 00:00	0207_QC301_240403	✓	
EB2412403-072	04-Apr-2024 00:00	0207_QC302_240404	✓	
EB2412403-073	05-Apr-2024 00:00	0207_QC303_240405	✓	
EB2412403-074	08-Apr-2024 00:00	0207_QC304_240408	✓	
EB2412403-075	09-Apr-2024 00:00	0207_QC305_240409	✓	
EB2412403-076	10-Apr-2024 00:00	0207_QC306_240410	✓	
EB2412403-077	11-Apr-2024 00:00	0207_QC307_240411	✓	
EB2412403-078	12-Apr-2024 00:00	0207_QC308_240412	✓	

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums
(WATER) EP231S: PFAS Surrogate

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412403-AB**	Page	: 1 of 5
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +61 07 3553 2000	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: [redacted]12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 26-Apr-2024 11:58
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (26/04/2024): This report has been amended as a result of a request from James Peachey via email on 26/04/2024 to split ALS #041 into a separate COA. All analysis results are as per the previous report.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration 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	0207_MW281_240411	----	----	----	----
				Sampling date / time	11-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412403-041	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.16**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.14**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.81**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.07**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.66**	----	----	----	----
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		**0.06**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.20**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.12**	----	----	----	----
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	0207_MW281_240411	----	----	----	----
				Sampling date / time	11-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412403-041	--------	--------	--------	--------
					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		**3.30**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.47**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**3.06**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.1**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.6**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412403-AB**	Page	: 1 of 4
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	[redacted]
Address	[redacted]	Address	[redacted]
Telephone	[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 26-Apr-2024
Sampler	[redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5737809)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	83.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	97.6	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	102	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	86.9	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5737809)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	96.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	93.1	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.0	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	96.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	97.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	97.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	87.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	92.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	96.4	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5737809)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	97.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	98.0	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	90.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.6	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	98.7	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5737809)								

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: 5737809) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	75.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	97.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	81.7	70.0	130
EP231P: PFAS Sums (QCLot: 5737809)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412403**	Page	: 1 of 13
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 26-Apr-2024
Sampler	: [redacted]	No. of samples received	: 68
Order number	: 60612563 2.1	No. of samples analysed	: 68

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	72	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	72	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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued							
0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-Oct-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) 0207_MW167_240402, 0207_MW172_240402, 0207_MW173_240402, 0207_MW193_240402, 0207_MW198_240402, 0207_MW201_240402, 0207_MW202_240402, 0207_MW203_240402, 0207_MW204_240402, 0207_MW205_240402, 0207_MW207_240402, 0207_MW221_240402	**02-Apr-2024**	**19-Apr-2024**	29-Sep-2024	✓	**19-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW299_240402, 0207_MW300_240402, 0207_QC100_240402, 0207_QC300_240402	**02-Apr-2024**	**20-Apr-2024**	29-Sep-2024	✓	**20-Apr-2024**	29-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW174_240403, 0207_MW178_240403, 0207_MW179_240403, 0207_MW187_240403, 0207_MW189_240403, 0207_MW222_240403, 0207_MW223_240403, 0207_MW229_240403, 0207_MW230_240403, 0207_MW232_240403, 0207_MW233_240403	**03-Apr-2024**	**19-Apr-2024**	30-Sep-2024	✓	**19-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC101_240403, 0207_QC102_240403, 0207_QC103_240403, 0207_QC104_240403, 0207_QC301_240403	**03-Apr-2024**	**20-Apr-2024**	30-Sep-2024	✓	**20-Apr-2024**	30-Sep-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW235_240404, 0207_MW236_240404, 0207_MW241_240404, 0207_MW249_240404, 0207_MW252_240404	**04-Apr-2024**	**19-Apr-2024**	01-Oct-2024	✓	**19-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW562_240404, 0207_MW563_240404, 0207_QC105_240404, 0207_QC106_240404, 0207_QC107_240404, 0207_QC108_240404, 0207_QC109_240404, 0207_QC302_240404	**04-Apr-2024**	**20-Apr-2024**	01-Oct-2024	✓	**20-Apr-2024**	01-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW242_240405, 0207_MW245_240405	**05-Apr-2024**	**19-Apr-2024**	02-Oct-2024	✓	**19-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC303_240405	**05-Apr-2024**	**20-Apr-2024**	02-Oct-2024	✓	**20-Apr-2024**	02-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW273_240408	**08-Apr-2024**	**19-Apr-2024**	05-Oct-2024	✓	**19-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW272_240408, 0207_QC304_240408	**08-Apr-2024**	**20-Apr-2024**	05-Oct-2024	✓	**20-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC305_240409	**09-Apr-2024**	**20-Apr-2024**	06-Oct-2024	✓	**20-Apr-2024**	06-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW255_240410, 0207_MW257_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums - Continued							
0207_QC306_240410	**10-Apr-2024**	**20-Apr-2024**	07-Oct-2024	✓	**20-Apr-2024**	07-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW262_240411, 0207_MW265_240411, 0207_MW266_240411, 0207_MW275_240411, 0207_MW278_240411, 0207_MW280_240411, 0207_MW281_240411	**11-Apr-2024**	**19-Apr-2024**	08-Oct-2024	✓	**19-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW274_240411, 0207_MW282_240411, 0207_MW285_240411, 0207_MW276_240411, 0207_QC307_240411	**11-Apr-2024**	**20-Apr-2024**	08-Oct-2024	✓	**20-Apr-2024**	08-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_QC308_240412	**12-Apr-2024**	**20-Apr-2024**	09-Oct-2024	✓	**20-Apr-2024**	09-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	72	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	72	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	9	**11.11**	**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.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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	: **EB2412425**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 19-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **24-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: Esky Medium	No. of samples received / analysed	: 12 / 12

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**
- EP231: ALS requires 20ml of sample to analyse water samples for EP231X. Where larger volume bottles have been submitted analysis has been re-logged for direct injection (EP231-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.

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: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)
EB2412425-001	10-Apr-2024 00:00	0207_SD017_240410	✓	✓
EB2412425-002	08-Apr-2024 00:00	0207_SD018_240408	✓	✓
EB2412425-010	08-Apr-2024 00:00	0207_SD032_240408	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (30 analytes)	WATER - EP231X-INJ PFAS - Full Suite (31 analytes)
EB2412425-003	08-Apr-2024 00:00	0207_MW267_240408	✓	
EB2412425-004	08-Apr-2024 00:00	0207_MW268_240408	✓	
EB2412425-005	08-Apr-2024 00:00	0207_MW269_240408	✓	
EB2412425-006	10-Apr-2024 00:00	0207_MW271_240410	✓	
EB2412425-007	08-Apr-2024 00:00	0207_MW294_240408	✓	
EB2412425-008	08-Apr-2024 00:00	0207_MW295_240408	✓	
EB2412425-009	08-Apr-2024 00:00	0207_SW032_240408		✓
EB2412425-011	08-Apr-2024 00:00	0207_SW056_240408		✓
EB2412425-012	08-Apr-2024 00:00	0207_SW057_240410		✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(SOIL) EP231S: PFAS Surrogate

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry). Only applies to samples EB2412425 (001, 002).

(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids

(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(SOIL) EP231C: Perfluoroalkyl Sulfonamides

(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids

(SOIL) EP231P: PFAS Sums

(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412425**	Page	: 1 of 13
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 30-Apr-2024 17:27
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Soil Preparation, Stafford, QLD
	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X-INJ PFAS: Sample '0207_SW056_240408' (EB2412425-011) shows poor matrix spike recovery for EtFOSA due to matrix interference.
- EP231X: Poor matrix spike recovery for sample EB2412093-002 due to sample matrix interference.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X-INJ PFAS: The LOR for PFDoDA and PFUnDA has been raised in samples ‘0207_SW032_240408’ (EB2412425-009) and '0207_SW056_240408' (EB2412425-011) due to matrix interference.
- EP231: ALS requires 20ml of sample to analyse water samples for EP231X. Where larger volume bottles have been submitted analysis has been re-logged for direct injection (EP231-INJ) as a whole bottle extraction with solvent rinsing cannot be performed.
- 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.
- 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 USEPA 1633 limits 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.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD017_240410	0207_SD018_240408	0207_SD032_240408	----	----
				Sampling date / time	10-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412425-001	EB2412425-002	EB2412425-010	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	----	**40.5**	----	----
Moisture Content	----	0.1	%		**34.4**	**40.7**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0004**	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		----	----	**0.0003**	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0135**	**0.0036**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0016**	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		----	----	<0.001	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0004**	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		----	----	<0.0002	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD017_240410	0207_SD018_240408	0207_SD032_240408	----	----
				Sampling date / time	10-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412425-001	EB2412425-002	EB2412425-010	--------	--------
					Result	Result	Result	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0002**	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0004**	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		**0.0007**	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		**0.0024**	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0013**	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0014**	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0002**	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	<0.0005	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	<0.0005	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD017_240410	0207_SD018_240408	0207_SD032_240408	----	----
				Sampling date / time	10-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412425-001	EB2412425-002	EB2412425-010	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		----	----	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		----	----	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		----	----	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		----	----	<0.0002	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		----	----	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		----	----	<0.0005	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		----	----	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0207_SD017_240410	0207_SD018_240408	0207_SD032_240408	----	----
				Sampling date / time	10-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2412425-001	EB2412425-002	EB2412425-010	--------	--------
					Result	Result	Result	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		----	----	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		**0.0009**	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		----	----	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		----	----	**0.0003**	----	----
Sum of PFAS	----	0.0002	mg/kg		**0.0234**	**0.0036**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	**0.0003**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0139**	**0.0036**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	**0.0003**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0158**	**0.0036**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	**98.5**	----	----
13C4-PFOS	----	0.0002	%		**103**	**104**	----	----	----
13C8-PFOA	----	0.0002	%		----	----	**106**	----	----
13C8-PFOA	----	0.0002	%		**108**	**99.0**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW267_240408	0207_MW268_240408	0207_MW269_240408	0207_MW271_240410	0207_MW294_240408
				Sampling date / time	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	10-Apr-2024 00:00	08-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412425-003	EB2412425-004	EB2412425-005	EB2412425-006	EB2412425-007
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**0.13**	<0.02	<0.02	**0.07**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.13**	<0.02	<0.02	**0.08**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.14**	**0.60**	**0.03**	<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		**0.23**	**0.14**	**0.04**	<0.01	**0.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.04**	<0.02	**0.03**	**0.52**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.02**	**0.21**	<0.02	**0.02**	**0.36**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.02**	**0.17**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.02**	<0.01	<0.01	**0.17**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.05**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW267_240408	0207_MW268_240408	0207_MW269_240408	0207_MW271_240410	0207_MW294_240408
				Sampling date / time	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	10-Apr-2024 00:00	08-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		EB2412425-003	EB2412425-004	EB2412425-005	EB2412425-006	EB2412425-007
					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	**0.16**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**----**	**1.27**	**----**	**----**	**3.16**
Sum of PFAS	----	0.01	µg/L		**0.42**	**----**	**0.23**	**0.07**	**----**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.37**	**0.74**	**0.07**	<0.01	**1.30**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.42**	**1.14**	**0.23**	**0.07**	**2.99**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**96.8**	**97.4**	**110**	**100**
13C8-PFOA	----	0.02	%		**96.5**	**95.8**	**95.6**	**99.0**	**95.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW295_240408	0207_SW032_240408	0207_SW056_240408	0207_SW057_240410	----
				Sampling date / time	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2412425-008	EB2412425-009	EB2412425-011	EB2412425-012	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	<0.02	<0.02	----
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	**0.02**	**0.17**	----
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	**0.04**	**0.50**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	<0.02	<0.02	----
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	0.10	µg/L		----	<0.10	<0.10	<0.10	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	<0.02	**0.10**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	<0.02	**0.14**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	<0.02	**0.09**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	<0.01	**0.10**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	<0.02	**0.06**	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	<0.02	**0.03**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW295_240408	0207_SW032_240408	0207_SW056_240408	0207_SW057_240410	----
				Sampling date / time	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2412425-008	EB2412425-009	EB2412425-011	EB2412425-012	--------
					Result	Result	Result	Result	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.09	<0.07	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.09	<0.07	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	**0.10**	**0.08**	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	**0.12**	**0.10**	<0.05	----
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	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW295_240408	0207_SW032_240408	0207_SW056_240408	0207_SW057_240410	----
				Sampling date / time	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2412425-008	EB2412425-009	EB2412425-011	EB2412425-012	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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	----
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
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	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0207_MW295_240408	0207_SW032_240408	0207_SW056_240408	0207_SW057_240410	----
				Sampling date / time	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	08-Apr-2024 00:00	----
Compound	CAS Number	LOR	Unit		EB2412425-008	EB2412425-009	EB2412425-011	EB2412425-012	--------
					Result	Result	Result	Result	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	**0.22**	**0.24**	**1.19**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	<0.01	**0.06**	**0.67**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	<0.01	**0.06**	**1.10**	----
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	%		**103**	----	----	----	----
13C4-PFOS	----	0.02	%		----	**106**	**111**	**102**	----
13C8-PFOA	----	0.02	%		**95.8**	----	----	----	----
13C8-PFOA	----	0.02	%		----	**102**	**99.4**	**94.9**	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	68	136
13C8-PFOA	----	69	133

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry). Only applies to samples EB2412425 (001, 002).

(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids

(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(SOIL) EP231C: Perfluoroalkyl Sulfonamides

(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids

(SOIL) EP231P: PFAS Sums

(SOIL) EP231S: PFAS Surrogate

(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

QUALITY CONTROL REPORT

Work Order	: **EB2412425**	Page	: 1 of 15
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	[redacted]	Address	[redacted]
Telephone	[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 17-Apr-2024
C-O-C number	: ----	Issue Date	: 30-Apr-2024
Sampler	[redacted]		
Site	: ----		
Quote number	: SY/139/19 V3		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Soil Preparation, Stafford, QLD
	2IC Organic Chemist	Melbourne Inorganics, Springvale, VIC
	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5731765)									
EB2412093-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	5.7	6.5	13.1	No Limit
EM2405953-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	5.4	6.0	10.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5756208)									
EB2412425-010	0207_SD032_240408	EA055: Moisture Content	----	0.1	%	40.5	42.0	3.7	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5733066)									
EB2412093-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2412200-013	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5756207)									
EB2412425-010	0207_SD032_240408	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5756207) - continued									
EB2412425-010	0207_SD032_240408	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5733066)									
EB2412093-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2412200-013	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5756207)									
EB2412425-010	0207_SD032_240408	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5756207) - continued									
EB2412425-010	0207_SD032_240408	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5733066)									
EB2412093-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2412200-013	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5756207)									
EB2412425-010	0207_SD032_240408	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5756207) - continued									
EB2412425-010	0207_SD032_240408	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5733066)									
EB2412093-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2412200-013	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5756207)									
EB2412425-010	0207_SD032_240408	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5733066)									
EB2412093-001	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2412200-013	Anonymous	EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5738995)									
EB2412425-009	0207_SW032_240408	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5743743)									
EB2413241-004	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01 (0.02)*	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01 (0.02)*	µg/L	<0.02	<0.02	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 (0.23)*	µg/L	<0.23	<0.23	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5738995)									
EB2412425-009	0207_SW032_240408	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02 (0.09)*	µg/L	<0.09	<0.09	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	0.10	0.07	36.8	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	0.12	0.10	16.4	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5743743)									
EB2413241-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01 (0.02)*	µg/L	0.26	0.26	0.0	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	1.01	1.01	0.0	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.88	0.86	2.6	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.21	0.21	0.0	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5743743) - continued									
EB2413241-004	Anonymous	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	0.3	0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5738995)									
EB2412425-009	0207_SW032_240408	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5743743)									
EB2413241-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5738995)									
EB2412425-009	0207_SW032_240408	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5738995) - continued									
EB2412425-009	0207_SW032_240408	EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5743743)									
EB2413241-004	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	6.18	6.17	0.0	0% - 20%
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	1.58	1.73	8.8	0% - 20%
		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: 5738995)									
EB2412425-009	0207_SW032_240408	EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5733066)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00111 mg/kg	82.8	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	104	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00114 mg/kg	96.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	106	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	92.5	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00121 mg/kg	84.9	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5756207)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	98.2	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	123	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	116	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	127	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	101	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	92.5	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5733066)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	91.3	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.9	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	75.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.9	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5756207)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	116	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	71.0	131

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5756207) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	94.9	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5733066)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.6	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	84.6	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	89.1	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.4	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.9	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5756207)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	100	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.4	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	116	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.1	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5733066)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	101	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00119 mg/kg	91.0	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	97.0	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00121 mg/kg	94.0	70.0	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5756207)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	106	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	108	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	104	54.8	124
EP231P: PFAS Sums (QCLot: 5733066)								
EP231X: Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----

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: 5738995)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	77.7	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	81.1	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.475 µg/L	79.8	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	82.2	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	94.3	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	79.4	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5743743)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	106	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	117	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	110	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	96.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	112	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5738995)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	89.1	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	88.0	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	87.0	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	83.0	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	83.2	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	79.2	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	92.6	71.0	129

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: 5738995) - continued								
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	80.8	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	84.6	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	80.4	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	91.9	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5743743)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	109	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	105	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	97.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	114	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	93.6	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	96.1	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5738995)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	83.8	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	85.0	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	71.7	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	91.0	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	84.6	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	79.4	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	95.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5743743)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	102	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	81.9	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134

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: 5743743) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	108	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	80.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	114	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5738995)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	79.1	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	97.3	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	90.4	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	89.4	62.2	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5743743)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	105	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	79.7	64.2	133
EP231P: PFAS Sums (QCLot: 5738995)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5733066)							
EB2412093-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00111 mg/kg	94.8	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00118 mg/kg	88.0	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00114 mg/kg	99.1	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	106	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	99.3	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00121 mg/kg	67.5	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5733066)							

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5733066) - continued							
EB2412093-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	85.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	102	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	93.2	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	102	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	98.8	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	93.6	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	95.9	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# 56.9	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	89.8	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	105	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	101	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5733066)							
EB2412093-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	96.8	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	99.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	85.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	87.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	97.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	87.9	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	90.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5733066)							
EB2412093-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	112	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00119 mg/kg	97.5	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	95.4	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00121 mg/kg	# 61.2	70.0	130

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: 5738995)							
EB2412425-011	0207_SW056_240408	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	72.7	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	84.0	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	82.9	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	82.4	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	81.8	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5738995) - continued							
EB2412425-011	0207_SW056_240408	EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	74.3	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5738995)							
EB2412425-011	0207_SW056_240408	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	83.8	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	84.8	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	86.6	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	81.4	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	77.4	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	86.0	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	90.2	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	71.6	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	70.2	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	71.4	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	91.2	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5738995)							
EB2412425-011	0207_SW056_240408	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	83.2	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	78.2	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	# 68.3	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	84.2	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	83.0	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	78.2	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	94.6	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5738995)							
EB2412425-011	0207_SW056_240408	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	73.3	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	85.3	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	81.7	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	70.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412425**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 30-Apr-2024
Sampler	[redacted]	No. of samples received	: 12
Order number	: 60612563 2.1	No. of samples analysed	: 12

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

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231B: Perfluoroalkyl Carboxylic Acids	EB2412093--002	Anonymous	**Perfluoroundecanoic acid (PFUnDA)**	2058-94-8	56.9 %	64.0-136%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2412093--002	Anonymous	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	61.2 %	70.0-130%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231C: Perfluoroalkyl Sulfonamides	EB2412425--011	0207_SW056_240408	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	68.3 %	70.0-130%	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)	Date extracted	Due for extraction	**Days overdue**	Date analysed	Due for analysis	**Days overdue**
EA055: Moisture Content (Dried @ 105-110°C)						
HDPE Soil Jar						
0207_SD032_240408	----	----	----	29-Apr-2024	22-Apr-2024	**7**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

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	13	7.69	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0207_SD018_240408	**08-Apr-2024**	**----**	----	----	**17-Apr-2024**	22-Apr-2024	✓
HDPE Soil Jar (EA055) 0207_SD032_240408	**08-Apr-2024**	**----**	----	----	**29-Apr-2024**	22-Apr-2024	×
HDPE Soil Jar (EA055) 0207_SD017_240410	**10-Apr-2024**	**----**	----	----	**17-Apr-2024**	24-Apr-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0207_SD018_240408	**08-Apr-2024**	**18-Apr-2024**	05-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD032_240408	**08-Apr-2024**	**29-Apr-2024**	05-Oct-2024	✓	**30-Apr-2024**	08-Jun-2024	✓
HDPE Soil Jar (EP231X) 0207_SD017_240410	**10-Apr-2024**	**18-Apr-2024**	07-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0207_SD018_240408	**08-Apr-2024**	**18-Apr-2024**	05-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD032_240408	**08-Apr-2024**	**29-Apr-2024**	05-Oct-2024	✓	**30-Apr-2024**	08-Jun-2024	✓
HDPE Soil Jar (EP231X) 0207_SD017_240410	**10-Apr-2024**	**18-Apr-2024**	07-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0207_SD018_240408	**08-Apr-2024**	**18-Apr-2024**	05-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD032_240408	**08-Apr-2024**	**29-Apr-2024**	05-Oct-2024	✓	**30-Apr-2024**	08-Jun-2024	✓
HDPE Soil Jar (EP231X) 0207_SD017_240410	**10-Apr-2024**	**18-Apr-2024**	07-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0207_SD018_240408	**08-Apr-2024**	**18-Apr-2024**	05-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD032_240408	**08-Apr-2024**	**29-Apr-2024**	05-Oct-2024	✓	**30-Apr-2024**	08-Jun-2024	✓
HDPE Soil Jar (EP231X) 0207_SD017_240410	**10-Apr-2024**	**18-Apr-2024**	07-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0207_SD018_240408	**08-Apr-2024**	**18-Apr-2024**	05-Oct-2024	✓	**18-Apr-2024**	28-May-2024	✓
HDPE Soil Jar (EP231X) 0207_SD032_240408	**08-Apr-2024**	**29-Apr-2024**	05-Oct-2024	✓	**30-Apr-2024**	08-Jun-2024	✓
HDPE Soil Jar (EP231X) 0207_SD017_240410	**10-Apr-2024**	**18-Apr-2024**	07-Oct-2024	✓	**18-Apr-2024**	28-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
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW267_240408, 0207_MW268_240408, 0207_MW269_240408, 0207_MW294_240408, 0207_MW295_240408	**08-Apr-2024**	**23-Apr-2024**	05-Oct-2024	✓	**23-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW032_240408, 0207_SW056_240408, 0207_SW057_240410	**08-Apr-2024**	**24-Apr-2024**	05-Oct-2024	✓	**24-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW271_240410	**10-Apr-2024**	**23-Apr-2024**	07-Oct-2024	✓	**23-Apr-2024**	07-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW267_240408, 0207_MW268_240408, 0207_MW269_240408, 0207_MW294_240408, 0207_MW295_240408	**08-Apr-2024**	**23-Apr-2024**	05-Oct-2024	✓	**23-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW032_240408, 0207_SW056_240408, 0207_SW057_240410	**08-Apr-2024**	**24-Apr-2024**	05-Oct-2024	✓	**24-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW271_240410	**10-Apr-2024**	**23-Apr-2024**	07-Oct-2024	✓	**23-Apr-2024**	07-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW267_240408, 0207_MW268_240408, 0207_MW269_240408, 0207_MW294_240408, 0207_MW295_240408	**08-Apr-2024**	**23-Apr-2024**	05-Oct-2024	✓	**23-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW032_240408, 0207_SW056_240408, 0207_SW057_240410	**08-Apr-2024**	**24-Apr-2024**	05-Oct-2024	✓	**24-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW271_240410	**10-Apr-2024**	**23-Apr-2024**	07-Oct-2024	✓	**23-Apr-2024**	07-Oct-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) 0207_MW267_240408, 0207_MW268_240408, 0207_MW269_240408, 0207_MW294_240408, 0207_MW295_240408	**08-Apr-2024**	**23-Apr-2024**	05-Oct-2024	✓	**23-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW032_240408, 0207_SW056_240408, 0207_SW057_240410	**08-Apr-2024**	**24-Apr-2024**	05-Oct-2024	✓	**24-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW271_240410	**10-Apr-2024**	**23-Apr-2024**	07-Oct-2024	✓	**23-Apr-2024**	07-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW267_240408, 0207_MW268_240408, 0207_MW269_240408, 0207_MW294_240408, 0207_MW295_240408	**08-Apr-2024**	**23-Apr-2024**	05-Oct-2024	✓	**23-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X-INJ) 0207_SW032_240408, 0207_SW056_240408, 0207_SW057_240410	**08-Apr-2024**	**24-Apr-2024**	05-Oct-2024	✓	**24-Apr-2024**	05-Oct-2024	✓
HDPE (no PTFE) (EP231X) 0207_MW271_240410	**10-Apr-2024**	**23-Apr-2024**	07-Oct-2024	✓	**23-Apr-2024**	07-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: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**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	1	13	**7.69**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, 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 5.4, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. 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.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
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	: **EB2414906**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	[redacted]	E-mail	: [redacted]
Telephone	[redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	Quote number	: ES2019AECOMAU0030 (SY/139/19 V3)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: AECOM		

Dates

Date Samples Received	: 03-May-2024 16:34	Issue Date	: 03-May-2024
Client Requested Due Date	: 15-May-2024	Scheduled Reporting Date	: **15-May-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 6.5°C, 8.6°C, 7.7°C - Ice present
Receipt Detail	: HARD ESKY	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- **PFAS analysis will be conducted by ALS Environmental, Melbourne, NATA accreditation No. 825, Site No. 13778.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2414906-001	03-May-2024 00:00	0207_MW132_240503	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) Email
- EDI Format - ESDAT (ESDAT) Email

DERP ESDAT REPORTS
- EDI Format - ESDAT (ESDAT) 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
- A4 - AU Tax Invoice (INV) Email
- Chain of Custody (CoC) (COC) Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) Email
- EDI Format - ESDAT (ESDAT) 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) Email
- EDI Format - ESDAT (ESDAT) Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2414906**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 03-May-2024 16:34
Order number	: 60612563 2.1	Date Analysis Commenced	: 08-May-2024
C-O-C number	: ----	Issue Date	: 13-May-2024 17:10
Sampler	: AECOM		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 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	0207_MW132_240503	----	----	----	----
				Sampling date / time	03-May-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2414906-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.72**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.82**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**6.24**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.27**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.20**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.37**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.62**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.24**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.42**	----	----	----	----
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	0207_MW132_240503	----	----	----	----
				Sampling date / time	03-May-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2414906-001	--------	--------	--------	--------
					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		**16.5**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**11.4**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**15.1**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.9**	----	----	----	----
13C8-PFOA	----	0.02	%		**102**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2414906**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 03-May-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 08-May-2024
C-O-C number	: ----	Issue Date	: 13-May-2024
Sampler	: AECOM		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5779043)									
EM2407049-001	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
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5779043)									
EM2407049-001	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: 5779043)									
EM2407049-001	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

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: 5779043) - continued									
EM2407049-001	Anonymous	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: 5779043)									
EM2407049-001	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: 5779043)									
EM2407049-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5779043)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	86.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	87.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	89.8	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	93.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	102	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	80.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5779043)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.0	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	87.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	90.1	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	76.1	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	88.5	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	78.7	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	89.9	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.5	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	105	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5779043)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	97.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	89.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	87.4	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	90.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.2	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	88.5	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	87.7	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5779043)								

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: 5779043) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	102	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	91.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.6	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	90.3	70.0	130
EP231P: PFAS Sums (QCLot: 5779043)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5779043)							
EM2407049-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.222 µg/L	85.5	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	90.3	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.228 µg/L	93.7	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	95.3	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	109	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	72.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5779043)							
EM2407049-002	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	97.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	96.7	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	94.0	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	88.5	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	79.9	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	92.0	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	69.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	93.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	105	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5779043)							

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: 5779043) - continued							
EM2407049-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	100	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.3	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	90.5	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	87.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	92.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	97.9	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	100	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5779043)							
EM2407049-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	104	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.238 µg/L	99.3	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	101	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.242 µg/L	81.8	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2414906**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 03-May-2024
Site	: ----	Issue Date	: 13-May-2024
Sampler	: AECOM	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		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) 0207_MW132_240503	**03-May-2024**	**09-May-2024**	30-Oct-2024	✓	**09-May-2024**	30-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0207_MW132_240503	**03-May-2024**	**09-May-2024**	30-Oct-2024	✓	**09-May-2024**	30-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0207_MW132_240503	**03-May-2024**	**09-May-2024**	30-Oct-2024	✓	**09-May-2024**	30-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0207_MW132_240503	**03-May-2024**	**09-May-2024**	30-Oct-2024	✓	**09-May-2024**	30-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0207_MW132_240503	**03-May-2024**	**09-May-2024**	30-Oct-2024	✓	**09-May-2024**	30-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	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 5.4, 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	: **EB2412284**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412284-001	09-Apr-2024 00:00	0207_MW021_240409	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412284**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:25
Sampler	[redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- 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	0207_MW021_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412284-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.19**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.19**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.71**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.20**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.45**	----	----	----	----
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		**0.06**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.27**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.10**	----	----	----	----
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	0207_MW021_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412284-001	--------	--------	--------	--------
					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		**7.32**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**6.16**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.83**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.5**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.4**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412284**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5736069)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	91.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	92.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	98.5	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	88.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	83.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736069)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	99.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	98.3	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	97.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.2	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.3	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	105	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736069)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	98.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	114	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.8	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	99.5	70.0	130
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	98.4	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736069)								

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: 5736069) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	96.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	89.2	70.0	130
EP231P: PFAS Sums (QCLot: 5736069)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412284**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW021_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW021_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW021_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW021_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW021_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-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	20	**0.00**	**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	0	20	**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.

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: AECO06/240430/1

Total No. of Samples: 16

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N24/009271	9-MAY-2024	0861_QC206_240415	WATER 15/04/2024
N24/009272	9-MAY-2024	0861_QC207_240416	WATER 16/04/2024

N24/009273	9-MAY-2024	0861_QC201_240409	SEDIMENT 09/04/2024
N24/009274	9-MAY-2024	0861_QC202_240410	SEDIMENT 10/04/2024
N24/009275	9-MAY-2024	0861_QC203_240411	SEDIMENT 11/04/2024
N24/009276	9-MAY-2024	0861_QC204_240412	SEDIMENT 12/04/2024
N24/009277	9-MAY-2024	0861_QC205_240412	SEDIMENT 12/04/2024
N24/009278	9-MAY-2024	0861_QC200_240409	WATER 09/04/2024
N24/009279	9-MAY-2024	0861_QC200_240409	SEDIMENT 09/04/2024
N24/009280	9-MAY-2024	0861_QC201_240409	WATER 09/04/2024
N24/009281	9-MAY-2024	0861_QC202_240410	WATER 10/04/2024
N24/009282	9-MAY-2024	0861_QC203_240411	WATER 11/04/2024
N24/009283	9-MAY-2024	0861_QC204_240412	WATER 12/04/2024
N24/009284	9-MAY-2024	0861_QC205_240412	WATER 12/04/2024
N24/009285	9-MAY-2024	0861_QC208_240417	WATER 17/04/2024
N24/009286	9-MAY-2024	0861_QC209_240418	WATER 18/04/2024

SAMPLE RECEIVED CONDITION

Date samples received:	30-APR-2024
Sample received in good order:	Yes
NMI Quotation no. provided:	QLD_0861_PFASOMP_24
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	KINDLY CONFIRM ONE EMAIL ADDRESS WHICH IS NOT CLEARLY WRITTEN- [redacted]
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

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/240416
		Quote No.	: QT-02257
		Order No.	: 60612563_2_1
		Date Received	: 16-APR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0207_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/008163	0207_QC201_240403	WATER 03/04/24
N24/008164	0207_QC200_240402	WATER 02/04/24
N24/008165	0207_QC202_240403	WATER 03/04/24
N24/008166	0207_QC203_240403	WATER 03/04/24

Lab Reg No.		N24/008163	N24/008164	N24/008165	N24/008166	
Date Sampled		03-APR-2024	02-APR-2024	03-APR-2024	03-APR-2024	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	0.35	0.14	1.9	NR70
PFPeA (2706-90-3)	ug/L	0.10	0.53	0.24	4.7	NR70
PFHxA (307-24-4)	ug/L	0.039	1.6	1.4	2.7	NR70
PFHpA (375-85-9)	ug/L	0.027	0.18	0.12	1.6	NR70
PFOA (335-67-1)	ug/L	<0.01	0.13	0.40	1.4	NR70
PFNA (375-95-1)	ug/L	<0.01	<0.01	<0.01	0.29	NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01	<0.01	0.011	NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)	ug/L	<0.01	1.3	0.59	0.26	NR70
PFHxS (355-46-4)	ug/L	0.016	5.2	5.3	1.7	NR70
PFHpS (375-92-8)	ug/L	<0.01	0.11	0.42	0.078	NR70
PFOS (1763-23-1)	ug/L	<0.02	2.9	17	1.6	NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)	ug/L	<0.01	1.6	0.52	0.28	NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/008163	N24/008164	N24/008165	N24/008166	
Date Sampled		03-APR-2024	02-APR-2024	03-APR-2024	03-APR-2024	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	<0.01	<0.01	0.56	NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01	0.031	NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)	%	106	105	115	108	NR70
PFPeA (Surrogate Recovery)	%	106	105	113	108	NR70
PFHxA (Surrogate Recovery)	%	102	108	123	118	NR70
PFHpA (Surrogate Recovery)	%	108	111	119	116	NR70
PFOA (Surrogate Recovery)	%	105	107	118	107	NR70
PFNA (Surrogate Recovery)	%	85	108	105	102	NR70
PFDA (Surrogate Recovery)	%	83	115	113	109	NR70
PFUdA (Surrogate Recovery)	%	65	104	106	106	NR70
PFDoA (Surrogate Recovery)	%	60	106	113	100	NR70
PFTeDA (Surrogate Recovery)	%	63	103	99	90	NR70
PFHxDA (Surrogate Recovery)	%	88	114	129	109	NR70
FOUEA (Surrogate Recovery)	%	50	101	111	109	NR70
PFBS (Surrogate Recovery)	%	99	108	119	105	NR70
PFHxS (Surrogate Recovery)	%	105	116	125	116	NR70
PFOS (Surrogate Recovery)	%	88	107	112	110	NR70
PFOSA (Surrogate Recovery)	%	58	103	112	101	NR70
N-MeFOSA (Surrogate Recovery)	%	37	109	119	110	NR70
N-EtFOSA (Surrogate Recovery)	%	35	101	107	107	NR70
N-MeFOSAA (Surrogate Recovery)	%	57	104	109	106	NR70
N-EtFOSAA (Surrogate Recovery)	%	58	101	107	93	NR70
N-MeFOSE (Surrogate Recovery)	%	35	82	90	89	NR70
N-EtFOSE (Surrogate Recovery)	%	43	105	111	103	NR70
4:2 FTS (Surrogate Recovery)	%	86	91	113	118	NR70
6:2 FTS (Surrogate Recovery)	%	80	85	92	82	NR70
8:2 FTS (Surrogate Recovery)	%	66	92	93	92	NR70
8:2 diPAP (Surrogate Recovery)	%	84	72	78	72	NR70
Dates						
Date extracted		22-APR-2024	22-APR-2024	22-APR-2024	22-APR-2024	
Date analysed		22-APR-2024	22-APR-2024	22-APR-2024	22-APR-2024	

N24/008163
to
N24/008175

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]
Organics - NSW
Accreditation No. 198

23-APR-2024

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/240416
		Quote No.	: QT-02257
		Order No.	: 60612563_2_1
		Date Received	: 16-APR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0207_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/008167	0207_QC204_240403	WATER 03/04/24
N24/008168	0207_QC205_240404	WATER 04/04/24
N24/008169	0207_QC206_240404	WATER 04/04/24
N24/008170	0207_QC207_240404	WATER 04/04/24

Lab Reg No.		N24/008167	N24/008168	N24/008169	N24/008170	
Date Sampled		03-APR-2024	04-APR-2024	04-APR-2024	04-APR-2024	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	<0.05	0.41	0.051	0.65	NR70
PFPeA (2706-90-3)	ug/L	0.024	0.67	0.037	0.57	NR70
PFHxA (307-24-4)	ug/L	0.065	1.1	0.11	1.6	NR70
PFHpA (375-85-9)	ug/L	<0.01	0.31	0.022	0.20	NR70
PFOA (335-67-1)	ug/L	0.023	0.41	0.066	0.25	NR70
PFNA (375-95-1)	ug/L	<0.01	0.023	<0.01	<0.01	NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)	ug/L	0.066	0.77	0.094	1.1	NR70
PFHxS (355-46-4)	ug/L	0.50	3.1	0.80	2.5	NR70
PFHpS (375-92-8)	ug/L	<0.01	0.16	0.048	0.045	NR70
PFOS (1763-23-1)	ug/L	0.16	7.8	2.4	0.47	NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)	ug/L	0.096	0.84	0.086	1.7	NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/008167	N24/008168	N24/008169	N24/008170	
Date Sampled		03-APR-2024	04-APR-2024	04-APR-2024	04-APR-2024	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	<0.01	<0.01	0.051	NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)	%	98	102	111	109	NR70
PFPeA (Surrogate Recovery)	%	100	96	115	112	NR70
PFHxA (Surrogate Recovery)	%	103	98	118	113	NR70
PFHpA (Surrogate Recovery)	%	103	102	115	116	NR70
PFOA (Surrogate Recovery)	%	92	96	110	116	NR70
PFNA (Surrogate Recovery)	%	92	65	105	114	NR70
PFDA (Surrogate Recovery)	%	82	74	114	112	NR70
PFUdA (Surrogate Recovery)	%	67	60	99	109	NR70
PFDoA (Surrogate Recovery)	%	53	49	104	109	NR70
PFTeDA (Surrogate Recovery)	%	49	52	100	99	NR70
PFHxDA (Surrogate Recovery)	%	68	84	118	121	NR70
FOUEA (Surrogate Recovery)	%	48	54	115	113	NR70
PFBS (Surrogate Recovery)	%	98	94	110	110	NR70
PFHxS (Surrogate Recovery)	%	104	93	108	114	NR70
PFOS (Surrogate Recovery)	%	92	87	109	117	NR70
PFOSA (Surrogate Recovery)	%	52	55	105	112	NR70
N-MeFOSA (Surrogate Recovery)	%	30	33	116	117	NR70
N-EtFOSA (Surrogate Recovery)	%	27	29	110	111	NR70
N-MeFOSAA (Surrogate Recovery)	%	41	46	106	115	NR70
N-EtFOSAA (Surrogate Recovery)	%	38	45	101	117	NR70
N-MeFOSE (Surrogate Recovery)	%	27	32	89	88	NR70
N-EtFOSE (Surrogate Recovery)	%	32	36	110	110	NR70
4:2 FTS (Surrogate Recovery)	%	96	91	104	99	NR70
6:2 FTS (Surrogate Recovery)	%	72	72	84	92	NR70
8:2 FTS (Surrogate Recovery)	%	66	54	89	87	NR70
8:2 diPAP (Surrogate Recovery)	%	70	73	77	99	NR70
Dates						
Date extracted		22-APR-2024	22-APR-2024	22-APR-2024	22-APR-2024	
Date analysed		22-APR-2024	22-APR-2024	22-APR-2024	22-APR-2024	

REPORT OF ANALYSIS

Lab Reg No.		N24/008167	N24/008168	N24/008169	N24/008170	
Date Sampled		03-APR-2024	04-APR-2024	04-APR-2024	04-APR-2024	
	Units					Method

[redacted]

Organics - NSW
Accreditation No. 198

23-APR-2024

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/240416
		Quote No.	: QT-02257
		Order No.	: 60612563_2_1
		Date Received	: 16-APR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0207_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/008171	0207_QC208_240404	WATER 04/04/24
N24/008172	0207_QC209_240404	WATER 04/04/24
N24/008173	0207_QC211_240405	WATER 05/04/24
N24/008174	0207_QC212_240405	WATER 05/04/24

Lab Reg No.		N24/008171	N24/008172	N24/008173	N24/008174	
Date Sampled		04-APR-2024	04-APR-2024	05-APR-2024	05-APR-2024	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	0.26	0.64	<0.05	<0.05	NR70
PFPeA (2706-90-3)	ug/L	0.36	0.88	<0.02	0.041	NR70
PFHxA (307-24-4)	ug/L	1.2	2.3	0.032	0.072	NR70
PFHpA (375-85-9)	ug/L	0.15	0.57	<0.01	0.013	NR70
PFOA (335-67-1)	ug/L	0.079	0.60	<0.01	0.025	NR70
PFNA (375-95-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDA (335-76-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)	ug/L	0.85	2.1	0.031	0.048	NR70
PFHxS (355-46-4)	ug/L	2.6	14	0.17	0.39	NR70
PFHpS (375-92-8)	ug/L	0.025	0.19	<0.01	0.016	NR70
PFOS (1763-23-1)	ug/L	0.13	0.48	0.40	0.38	NR70
PFNS (68259-12-1)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)	ug/L	0.84	1.9	0.058	0.059	NR70
PFOSA (754-91-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/008171	N24/008172	N24/008173	N24/008174	
Date Sampled		04-APR-2024	04-APR-2024	05-APR-2024	05-APR-2024	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)	ug/L	<0.01	0.035	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)	ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)	ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)	%	112	114	110	112	NR70
PFPeA (Surrogate Recovery)	%	115	116	136	117	NR70
PFHxA (Surrogate Recovery)	%	117	117	90	116	NR70
PFHpA (Surrogate Recovery)	%	115	117	99	118	NR70
PFOA (Surrogate Recovery)	%	113	111	100	117	NR70
PFNA (Surrogate Recovery)	%	101	116	100	103	NR70
PFDA (Surrogate Recovery)	%	112	120	95	111	NR70
PFUdA (Surrogate Recovery)	%	97	103	80	103	NR70
PFDoA (Surrogate Recovery)	%	99	112	83	105	NR70
PFTeDA (Surrogate Recovery)	%	93	103	66	97	NR70
PFHxDA (Surrogate Recovery)	%	111	116	59	109	NR70
FOUEA (Surrogate Recovery)	%	108	115	64	115	NR70
PFBS (Surrogate Recovery)	%	110	105	87	108	NR70
PFHxS (Surrogate Recovery)	%	118	112	106	108	NR70
PFOS (Surrogate Recovery)	%	108	117	92	119	NR70
PFOSA (Surrogate Recovery)	%	96	112	71	100	NR70
N-MeFOSA (Surrogate Recovery)	%	114	118	44	119	NR70
N-EtFOSA (Surrogate Recovery)	%	110	111	40	113	NR70
N-MeFOSAA (Surrogate Recovery)	%	99	112	72	105	NR70
N-EtFOSAA (Surrogate Recovery)	%	101	106	70	102	NR70
N-MeFOSE (Surrogate Recovery)	%	88	88	44	89	NR70
N-EtFOSE (Surrogate Recovery)	%	106	108	54	109	NR70
4:2 FTS (Surrogate Recovery)	%	99	99	168	106	NR70
6:2 FTS (Surrogate Recovery)	%	87	93	110	87	NR70
8:2 FTS (Surrogate Recovery)	%	79	93	89	91	NR70
8:2 diPAP (Surrogate Recovery)	%	73	82	73	75	NR70
Dates						
Date extracted		22-APR-2024	22-APR-2024	22-APR-2024	22-APR-2024	
Date analysed		22-APR-2024	22-APR-2024	22-APR-2024	22-APR-2024	

REPORT OF ANALYSIS

Lab Reg No.		N24/008171	N24/008172	N24/008173	N24/008174	
Date Sampled		04-APR-2024	04-APR-2024	05-APR-2024	05-APR-2024	
	Units					Method

[redacted]

Organics - NSW
Accreditation No. 198

23-APR-2024

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/240416
		Quote No.	: QT-02257
		Order No.	: 60612563_2_1
		Date Received	: 16-APR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0207_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/008175	0207_QC213_240403	WATER 03/04/24

Lab Reg No.		N24/008175				
Date Sampled		03-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	<0.01				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	0.065				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.52				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.		N24/008175				
Date Sampled		03-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)	%	104				NR70
PFPeA (Surrogate Recovery)	%	118				NR70
PFHxA (Surrogate Recovery)	%	100				NR70
PFHpA (Surrogate Recovery)	%	108				NR70
PFOA (Surrogate Recovery)	%	107				NR70
PFNA (Surrogate Recovery)	%	96				NR70
PFDA (Surrogate Recovery)	%	79				NR70
PFUdA (Surrogate Recovery)	%	61				NR70
PFDoA (Surrogate Recovery)	%	53				NR70
PFTeDA (Surrogate Recovery)	%	46				NR70
PFHxDA (Surrogate Recovery)	%	68				NR70
FOUEA (Surrogate Recovery)	%	57				NR70
PFBS (Surrogate Recovery)	%	99				NR70
PFHxS (Surrogate Recovery)	%	111				NR70
PFOS (Surrogate Recovery)	%	95				NR70
PFOSA (Surrogate Recovery)	%	50				NR70
N-MeFOSA (Surrogate Recovery)	%	28				NR70
N-EtFOSA (Surrogate Recovery)	%	25				NR70
N-MeFOSAA (Surrogate Recovery)	%	40				NR70
N-EtFOSAA (Surrogate Recovery)	%	39				NR70
N-MeFOSE (Surrogate Recovery)	%	26				NR70
N-EtFOSE (Surrogate Recovery)	%	32				NR70
4:2 FTS (Surrogate Recovery)	%	113				NR70
6:2 FTS (Surrogate Recovery)	%	84				NR70
8:2 FTS (Surrogate Recovery)	%	65				NR70
8:2 diPAP (Surrogate Recovery)	%	68				NR70
Dates						
Date extracted		22-APR-2024				
Date analysed		22-APR-2024				

[redacted]

Organics - NSW
Accreditation No. 198

23-APR-2024

REPORT OF ANALYSIS



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

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240416 **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	85	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	79	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	73	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	74	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	74	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	79	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	82	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	81	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	73	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	85	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	79	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	75	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	75	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	71	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	80	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	78	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	75	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	67	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	83	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	74	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	58	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	83	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	84	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	78	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	77	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	87	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	123	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	81	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	90	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	81	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	75	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	51	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	94	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]

Organics Manager, NMI-North Ryde

Date: **23/04/2024**

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: **AECO06/240416/1**

Total No. of Samples: **3**

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N24/008160	23-APR-2024	0207_QC213_240403	SOIL 03.04.24
N24/008161	23-APR-2024	0207_QC214_240403	SOIL 03.04.24

SAMPLE RECEIVED CONDITION

Date samples received:	16-APR-2024
Sample received in good order:	Yes
NMI Quotation no. provided:	QLD_0207_PFASOMP_24
Client purchase order number:	60612563_2_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

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/240416/1
	[redacted]	**Quote No.**	: QT-02257
	[redacted]T	**Order No.**	: 60612563_2_1
		Date Received	: 16-APR-2024
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563 2.1		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N24/008160	0207_QC213_240403	SOIL 03.04.24
N24/008161	0207_QC214_240403	SOIL 03.04.24
N24/008162	0207_QC215_240403	SOIL 03.04.24

Lab Reg No.		N24/008160	N24/008161	N24/008162		
Date Sampled		03-APR-2024	03-APR-2024	03-APR-2024		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002	<0.002		NR70
PFPeA (2706-90-3)	mg/kg	<0.002	<0.002	<0.002		NR70
PFHxA (307-24-4)	mg/kg	<0.001	0.0019	<0.001		NR70
PFHpA (375-85-9)	mg/kg	<0.001	0.0040	<0.001		NR70
PFOA (335-67-1)	mg/kg	<0.001	0.0083	<0.001		NR70
PFNA (375-95-1)	mg/kg	<0.001	0.012	0.0018		NR70
PFDA (335-76-2)	mg/kg	<0.001	0.034	0.0060		NR70
PFUdA (2058-94-8)	mg/kg	<0.002	0.15	0.0085		NR70
PFDoA (307-55-1)	mg/kg	<0.002	0.49	0.012		NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	0.33	0.0043		NR70
PFTeDA (376-06-7)	mg/kg	<0.002	0.27	0.0028		NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	0.039	<0.002		NR70
PFODA (16517-11-6)	mg/kg	<0.005	0.0074	<0.005		NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001	<0.001		NR70
PFBS (375-73-5)	mg/kg	<0.001	<0.001	<0.001		NR70
PFPeS (2706-91-4)	mg/kg	<0.001	<0.001	<0.001		NR70
PFHxS (355-46-4)	mg/kg	<0.001	<0.001	0.0028		NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001	<0.001		NR70
PFOS (1763-23-1)	mg/kg	0.029	0.0064	0.026		NR70
PFNS (68259-12-1)	mg/kg	<0.001	<0.001	<0.001		NR70
PFDS (335-77-3)	mg/kg	<0.001	<0.001	<0.001		NR70
PFOSA (754-91-6)	mg/kg	<0.001	<0.001	<0.001		NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002	<0.002		NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002	<0.002		NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002	<0.002		NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002	<0.002		NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	<0.005		NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	<0.005		NR70

REPORT OF ANALYSIS

Lab Reg No.		N24/008160	N24/008161	N24/008162		
Date Sampled		03-APR-2024	03-APR-2024	03-APR-2024		
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001	<0.001		NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001	0.0061	<0.001		NR70
8:2 FTS (39108-34-4)	mg/kg	<0.001	0.12	<0.001		NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	0.034	<0.002		NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002	<0.002		NR70
PFBA (Surrogate Recovery)	%	115	107	102		NR70
PFPeA (Surrogate Recovery)	%	121	111	109		NR70
PFHxA (Surrogate Recovery)	%	115	112	96		NR70
PFHpA (Surrogate Recovery)	%	121	109	98		NR70
PFOA (Surrogate Recovery)	%	119	105	104		NR70
PFNA (Surrogate Recovery)	%	116	109	99		NR70
PFDA (Surrogate Recovery)	%	119	109	104		NR70
PFUdA (Surrogate Recovery)	%	114	102	104		NR70
PFDoA (Surrogate Recovery)	%	126	106	112		NR70
PFTeDA (Surrogate Recovery)	%	130	108	124		NR70
PFHxDA (Surrogate Recovery)	%	134	108	102		NR70
FOUEA (Surrogate Recovery)	%	88	101	85		NR70
PFBS (Surrogate Recovery)	%	107	104	92		NR70
PFHxS (Surrogate Recovery)	%	119	107	97		NR70
PFOS (Surrogate Recovery)	%	111	105	106		NR70
PFOSA (Surrogate Recovery)	%	114	97	92		NR70
N-MeFOSA (Surrogate Recovery)	%	117	114	93		NR70
N-EtFOSA (Surrogate Recovery)	%	108	112	84		NR70
N-MeFOSAA (Surrogate Recovery)	%	107	102	86		NR70
N-EtFOSAA (Surrogate Recovery)	%	116	100	104		NR70
N-MeFOSE (Surrogate Recovery)	%	76	86	55		NR70
N-EtFOSE (Surrogate Recovery)	%	92	108	73		NR70
4:2 FTS (Surrogate Recovery)	%	97	94	77		NR70
6:2 FTS (Surrogate Recovery)	%	79	75	89		NR70
8:2 FTS (Surrogate Recovery)	%	82	84	89		NR70
8:2 diPAP (Surrogate Recovery)	%	147	106	158		NR70
Dates						
Date extracted		22-APR-2024	22-APR-2024	22-APR-2024		
Date analysed		22-APR-2024	22-APR-2024	22-APR-2024		

N24/008160
to
N24/008162

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]

Organics - NSW
Accreditation No. 198

24-APR-2024

Lab Reg No.	Units	N24/008160	N24/008161	N24/008162		Method
Date Sampled		03-APR-2024	03-APR-2024	03-APR-2024		
Trace Elements						
Total Solids	%	60.4	83.3	65.6		NT2_49
Dates						
Date extracted		23-APR-2024	23-APR-2024	23-APR-2024		
Date analysed		24-APR-2024	24-APR-2024	24-APR-2024		

[redacted]

Morgan es -
Accreditation No. 198

24-APR-2024

All results are expressed on a dry weight basis.

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.

REPORT OF ANALYSIS

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

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/240416/1 **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	121	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	NA	NA	NA	94	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	NA	NA	NA	93	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	NA	NA	NA	97	NA
PFOA (335-67-1)	NR70	0.001	<0.001	NA	NA	NA	98	NA
PFNA (375-95-1)	NR70	0.001	<0.001	NA	NA	NA	103	NA
PFDA (335-76-2)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	NA	NA	NA	99	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	NA	NA	NA	109	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	NA	NA	NA	114	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	NA	NA	NA	105	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	NA	NA	NA	108	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	NA	NA	NA	105	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	105	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	NA	NA	NA	97	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	NA	NA	NA	94	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	NA	NA	NA	101	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFDS (335-77-3)	NR70	0.001	<0.001	NA	NA	NA	95	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	NA	NA	NA	100	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	NA	NA	NA	101	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	NA	NA	NA	118	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	NA	NA	NA	101	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	NA	NA	NA	103	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	NA	NA	NA	142	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	NA	NA	NA	114	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	NA	NA	NA	108	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	121	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	NA	NA	NA	112	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	NA	NA	NA	125	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]

Organics Manager, NMI-North Ryde

Date: **24/04/2024**

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2412269**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIS	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412269-001	10-Apr-2024 00:00	0207_MW134_240410	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412269**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024 12:03
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- 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	0207_MW134_240410	----	----	----	----
				Sampling date / time	10-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412269-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.03**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	----	----	----	----
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	0207_MW134_240410	----	----	----	----
				Sampling date / time	10-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412269-001	--------	--------	--------	--------
					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		**0.05**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.05**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.05**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**85.1**	----	----	----	----
13C8-PFOA	----	0.02	%		**99.6**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412269**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412269**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW134_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW134_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW134_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW134_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW134_240410	**10-Apr-2024**	**19-Apr-2024**	07-Oct-2024	✓	**19-Apr-2024**	07-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	20	**0.00**	**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	0	20	**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	: **EB2412273**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: Carsten Emrich
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412273-001	09-Apr-2024 00:00	0207_MW056_240409	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412273**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:24
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- 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	0207_MW056_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412273-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.16**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	----	----	----	----
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		**0.03**	----	----	----	----
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	0207_MW056_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412273-001	--------	--------	--------	--------
					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		**0.29**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.23**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.29**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	----	----	----	----
13C8-PFOA	----	0.02	%		**102**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412273**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	[redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412273**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	[redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW056_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW056_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW056_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW056_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW056_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-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	20	**0.00**	**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	0	20	**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	: **EB2412274**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412274-001	09-Apr-2024 00:00	0207_MW149_240409	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412274**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024 16:23
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- 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	0207_MW149_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412274-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
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	0207_MW149_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412274-001	--------	--------	--------	--------
					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	%		**89.7**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.7**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412274**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412274**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 22-Apr-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW149_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW149_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW149_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW149_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW149_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-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	20	**0.00**	**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	0	20	**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	: **EB2412275**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Page	: 1 of 3
Order number	: 60612563 2.1	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	: 12-Apr-2024 15:45	Issue Date	: 13-Apr-2024
Client Requested Due Date	: 23-Apr-2024	Scheduled Reporting Date	: **23-Apr-2024**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 10.8°C, 7.5°C, 11.3°C - Ice present
Receipt Detail	: HARD ESKIES	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- 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.
- **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.**

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)
EB2412275-001	09-Apr-2024 00:00	0207_MW151_240409	✓

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

[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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP reports

- *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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — 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 - EQUIS V5 AECOM (EQUIS_V5_AECOM) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids
(WATER) EP231B: Perfluoroalkyl Carboxylic Acids
(WATER) EP231C: Perfluoroalkyl Sulfonamides
(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids
(WATER) EP231P: PFAS Sums

CERTIFICATE OF ANALYSIS

Work Order	: **EB2412275**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024 15:45
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024 11:59
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

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

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

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

- **PFAS analysis will be conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778**
- 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	0207_MW151_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412275-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	----	----	----	----
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	0207_MW151_240409	----	----	----	----
				Sampling date / time	09-Apr-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2412275-001	--------	--------	--------	--------
					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		**0.02**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.3**	----	----	----	----
13C8-PFOA	----	0.02	%		**98.6**	----	----	----	----

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

QUALITY CONTROL REPORT

Work Order	: **EB2412275**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Order number	: 60612563 2.1	Date Analysis Commenced	: 16-Apr-2024
C-O-C number	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]		
Site	: ----		
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]	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5736061)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.222 µg/L	93.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.235 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.228 µg/L	95.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	94.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	88.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5736061)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	87.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	92.1	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	91.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.5	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	101	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	103	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5736061)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	99.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.5	70.0	130
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	93.7	70.0	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	94.7	70.0	130
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	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5736061)								

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: 5736061) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.234 µg/L	95.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.238 µg/L	98.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	102	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.242 µg/L	78.0	70.0	130
EP231P: PFAS Sums (QCLot: 5736061)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2412275**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 2.1 QLD_0207_PFASOMP_24	Date Samples Received	: 12-Apr-2024
Site	: ----	Issue Date	: 23-Apr-2024
Sampler	: [redacted]	No. of samples received	: 1
Order number	: 60612563 2.1	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	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)							
0207_MW151_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW151_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0207_MW151_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0207_MW151_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-Oct-2024	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0207_MW151_240409	**09-Apr-2024**	**19-Apr-2024**	06-Oct-2024	✓	**19-Apr-2024**	06-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	20	**0.00**	**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	0	20	**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.

Appendix F

Equipment Calibration Certificates

Oil / Water Interface Meter

Instrument Solinst Interface Meter (100M)
Serial No. 313385

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
	above 8 V	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check Connectors	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Tested by: [redacted]

Test date: 18-Mar-24

Next Test due: 14/09/2024

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **10D101443**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.0		413995	pH 7.0
2. pH 4.00		pH 4.0		414104	pH 4.0
3. ORP		231.86mV		418135/418134	234.5mV
4. EC		2760uS		414103	2761uS
5. D.O		100%		water	101% - 751.8mmHg
6. Temp		23.7oC		MultiTherm	22.5oC

Calibrated by: [redacted]

Calibration date: **28-Mar-24**

Next calibration due: **27/04/2024**

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **22G103272**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data.logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		100 ppm		water	100 ppm
2. Conductivity		2760uS		414103	2760uS
3. pH7		pH 7.00		413995	pH 7.00
4. pH4		pH 4.00		414104	pH 4.00
5. ORP mV		234.72		418135/418134	234.5
6. Temp		22.4°C		MultiTherm	22.5°C

Calibrated by: [redacted]

Calibration date: **29-Apr-24**

Next calibration due: **26-Oct-24**

Oil / Water Interface Meter

Instrument Solinst Interface Meter (30M)
Serial No. 485363

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: **01-May-24**

Next calibration due: **31-Oct-24**

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aimet
Make and Model:	YSI PRO PLUS
Serial Number:	10D101443

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	03.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mg/L	~~ppm~~ ORP
Calibration Standard Concentration:	4.00	7.00	2496	0.00	237.8
Calibration Reading:	4.01	7.01	2483	0.00	235.9
Calibration Temperature:	20.2	20.1	20.1	20.1	20.6

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork staff signature

03.04.24 — Date

Distribution: Project Central File

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airnet
Make and Model:	YSI Pro Plus
Serial Number:	10D101443

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	04.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	mg/L ppm	ORP ppm
Calibration Standard Concentration:	4.00	7.00	2496	0.00	240
Bump Test Reading:	4.00	6.99	2510	0.00	258.7
Bump Test Temperature:	20.1	20.2	20.1	20.0	20.2

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — 04.04.24

Fieldwork Staff Signature — Date

Distribution: Project Central File

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Plus
Serial Number:	10D101443

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	05.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mg/L	ppm ORP
Calibration Standard Concentration:	4.00	7.00	2549	0.00	237.8
Bump Test Reading:	4.02	7.01	2589	0.00	237.3
Bump Test Temperature:	21.0	21.0	21.1	21.0	21.0

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

05.04.24 — Date

Distribution: Project Central File

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Plus
Serial Number:	10D101443

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	08.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm high	ppm ORP
Calibration Standard Concentration:	4.00	7.00	2549	0.00	737.8
Calibration Reading:	3.95	7.00	2759	~~80.03~~	721.8
Calibration Temperature:	21.8	21.9	21.0	21.63	21.0

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

08.04.24 — Date

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Plus
Serial Number:	10D101443

CALIBRATION

~~CALIBRATE WITH CALIBRATION SOLUTIONS~~ Bump test

Date and Time:	04.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mg/L	~~ORP~~ ppm
Calibration Standard Concentration:	4.00	7.00	7549	0.00	237.8
~~Calibration Reading:~~ Bump	4.01	7.00	2492	0.00	236.4
Calibration Temperature:	21.0	21.0	21.0	21.1	21.0

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

04.04.24 — Date

Distribution: Project Central File

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Plus
Serial Number:	10D101443

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	10.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mg/L	ppm
Calibration Standard Concentration:	4.00	7.00	~~12~~ 4544	0.00	237.8
Bump Test Reading:	4.02	7.01	4601	0.00	237.1
Bump Test Temperature:	20.8	20.8	20.9	20.8	20.8

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

10.04.24

Date

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Plus
Serial Number:	10D101443

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	11.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mg/L	~~ppm~~ %SAT
Calibration Standard Concentration:	4.00	7.00	4549	0.00	257.8
Bump Test Reading:	4.02	7.00	4508	0.01	235.7
Bump Test Temperature:	21.1	21.0	21.0	21.1	21.0

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

12 04.24 — Date

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FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	Swartz Barracks	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Plus
Serial Number:	10D101443

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	12.04.24				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mg/L	~~ppm~~ ORP
Calibration Standard Concentration:	4.00	7.00	2549	0.00	237.8
Bump Test Reading:	4.01	7.00	2592	0.00	236.7
Bump Test Temperature:	21.0	21.2	21.0	21.0	21.1

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Charged Batteries.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

12.04.24 — Date

Distribution: Project Central File

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