

# **Appendix F**

**OMP Sampling Event Reports**



# Sampling Event Report February 2025

**PFAS OMP – HMAS Albatross**

Department of Defence

21 May 2025



→ The Power of Commitment

## Acknowledgement of Country

GHD acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land, water and sky throughout Australia on which we do business. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past, present and future, as they hold the memories, knowledges and spirit of Australia. GHD is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.



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# List of acronyms

Acronym	Term
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved Oxygen
DQI	Data Quality Indicator
DQO	Data Quality Objective
EC	Electrical Conductivity
EPA	Environment Protection Authority
FSANZ	Food Standards Australia New Zealand
HEPA	Heads of Environment Protection Authority
HHERA	Human Health and Ecological Risk Assessment
JBT	Jervis Bay Territory
LOR	Limit of Reporting
NATA	National Analytical Testing Authority
NEMP	National Environmental Management Plan
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
NSW	New South Wales
OMIR	Ongoing Monitoring Interpretive Report
OMP	Ongoing Monitoring Plan
ORP	Oxidation Reduction Potential
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PMAP	PFAS Management Area Plan
QA/QC	Quality Assurance and Quality Control

# List of units

Units	Term
°C	Degrees Celsius
µg/L	Micrograms per Litre
µS/cm	MicroSiemens per Centimetre
g	Grams
km	Kilometre
L	Litre
m	Metre
mg/L	Milligrams per Litre
mV	MilliVolts

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# 1. Introduction

GHD Pty Ltd (GHD) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) at His Majesty's Australian Ship (HMAS) Albatross (hereafter referred to as the 'site') in New South Wales (NSW).

The OMP (Defence, 2019) outlines the sampling requirements for the site and off-site areas within the Management Area. The location of the site and Management Area is shown in Figure 1, Appendix A. The site layout including Areas of Environmental Concern (AECs) and Contaminated Site Records (CSRs) are shown in Figure 2, Appendix A.

An Ongoing Monitoring Report (OMR) will be prepared following the completion of each 12-month sampling period.

This Sampling Event Report has been prepared to report the results of the February 2025 annual groundwater sampling and first biannual surface water sampling, specifically highlighting first-time detections and/or new exceedances of human health or ecological screening criteria for the sum of Perfluorooctane sulfonic acid (PFOS) and Perfluorohexane sulfonic acid (PFHxS) (herein referred to as PFOS+PFHxS), 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).

## 1.1 Objectives

The objective of this phase of works was to implement the scope of works for the February 2025 sampling event in accordance with the Sampling and Analysis Quality Plan (SAQP) (GHD, 2025).

The key objectives of the OMP sampling events are:

- Monitor the nature and extent (spatial and temporal) of PFAS impact in surface water pathways associated with site sources of PFAS derived from the historical use of aqueous film forming foam (AFFF).
- Monitor the migration of PFAS in surface water and ground water from the site using data obtained from this monitoring event.
- Provide confirmation of the current understanding of risk.
- Provide supporting data for assessment of management actions, where relevant.

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 PFAS Management Area Plan (PMAP) (Defence, 2019).

## 1.2 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 1.1 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 scope of works was completed in accordance with the SAQP (GHD, 2025), as follows:

- Organise fieldwork and obtain approval for site access to monitoring locations.
- Collection of groundwater samples and water quality parameters at the 32 scheduled groundwater locations (refer to Table 1 below and Figure 3 in Appendix A for specific locations).
- Collection of surface water samples and water quality parameters at all 18 scheduled surface water locations (refer to Table 2 below and Figure 4 in Appendix A).
- Analyse samples for quality assurance and quality control (QA/QC).
- Analysis of samples for PFAS suite at the standard limit of reporting (LOR).
- Data management of the OMP field and laboratory data in Defence ESdat database.
- Preparation of this Sampling Event Report.

**Table 1** Groundwater sampling locations

Location	Sub-catchment	Location ID	Total
<b>On-site (25 locations)</b>	Braidwood Road drain	0026_MW001	4
		0026_MW002	
		0026_MW012	
		0026_MW012P	
	Flat Rock Creek	0026_MW004	1
	Upper Currambene Creek	0026_MW005	5
		0026_MW029	
		0026_MW038	
		0026_MW030 <sup>1</sup>	
	Yerryong Gully	0026_MW117 <sup>1</sup>	10
		0026_MW006	
		0026_MW008	
		0026_MW009	
		0026_MW009P	
		0026_MW015	
		0026_MW016	
		0026_MW017	
		0026_MW039	
		0026_MW045	
	0026_MW046		
Upper Currambene Creek	0026_MW003	5	
	0026_MW088 <sup>2</sup>		
	0026_MW104 <sup>2</sup>		
	0026_MW112 <sup>2</sup>		
Private Property	Braidwood Road drain	0026_MW213 <sup>2</sup>	2
		0026_MW024	
		0026_MW031	

Location	Sub-catchment	Location ID	Total
<b>(3 locations)</b>	Upper Currumbene Creek	0026_MW026	1
	Braidwood Road drain	0026_MW018	2
		0026_MW044	
<b>Road Reserve (4 locations)</b>	Cabbage Tree Creek	0026_MW072	2
		0026_MW073	
<b>Total</b>			<b>32</b>

**Table Notes:**

- 1 – Monitoring locations added to this OMP.
- 2 – Locations added to this OMP for the February 2025 event only.

**Table 2**      *Surface water sampling locations*

Area	Sub-catchment	Location ID	Total
<b>On-site (6 locations)</b>	Braidwood Road drain	0026_SW007	2
		0026_SW018	
	Yerriyong Gully	0026_SW009	4
		0026_SW012	
		0026_SW106 <sup>1</sup>	
	0026_SW123 <sup>1</sup>		
<b>Off-site (12 locations)</b>	Braidwood Road drain	0026_SW005	4
		0026_SW006	
		0026_SW020	
		0026_SW124 <sup>1</sup>	
	Cabbage Tree Creek	0026_SW001	1
	Calymea Creek	0026_SW004B	1
	Flat Rock Creek	0026_SW002	1
	Parma Creek	0026_SW013	2
		0026_SW014	
	Upper Currumbene Creek	0026_SW008	3
		0026_SW049 <sup>1</sup>	
		0026_SW065 <sup>1</sup>	
<b>Total</b>			<b>18</b>

**Table Notes:**

- 1 – Monitoring locations added to this OMP.

## 2.1 SAQP deviations

The February 2025 sampling event was completed in general accordance with:

- The SAQP (GHD, 2025).
- GHD’s health and safety protocols.
- GHD’s standard operating procedures for the field work, which have been developed in accordance with NSW contaminated land guidance.

Deviations from the SAQP are outlined in Table 3.

**Table 3**      *Deviations from the SAQP*

SAQP Deviation	Comment/Justification	Impact on dataset
<b>Samples, as wells as associated gauging and water quality parameters were not collected from four of the 32 scheduled groundwater sampling locations.</b>	<p>The following groundwater locations were not able to be located:</p> <ul style="list-style-type: none"> <li>– 0026_MW030: Lost, likely buried. Approximately 0.5 hours spent trying to locate with metal detector, Global Positioning System (GPS) coordinates and shovel.</li> <li>– 0026_MW046: Lost, likely buried. Known to be lost prior to event. This location was last found and sampled in February 2023.</li> <li>– 0026_MW088: Destroyed, review of Nearmap aerial imagery show the carpark was resurfaced circa 2016 – 2017 and the well is likely paved over.</li> <li>– 0026_MW112: Destroyed, likely buried. Approximately 0.5 hours spent trying to locate with metal detector, GPS coordinates and shovel. Review of Nearmap aerial imagery show the site boundary fence was replaced and the land surface either side of the fence line cleared and levelled circa 2017.</li> </ul>	<ul style="list-style-type: none"> <li>– 0026_MW030 was added to the OMP to fill in data gaps in the area near the hangers. Data gaps remain at the depth 0026_MW030 targeted (screened between 20.5 – 23.5 m bgl).</li> <li>– 0026_MW046 provides spatial resolution on groundwater chemistry to the south-west of AEC2 (former fire training area (FFTA), AEC27B (parachute training area – northern) and AEC33 (former stockpile area), and exiting the base boundary. A data gap is present in this area if 0026_MW046 is not found or replaced.</li> <li>– 0026_MW088 and MW112 fill in data gaps near AEC34 (Cleared disturbed water logged area) and AEC25 (AFFF spill at hanger K (Dec 2014)) – The screened intervals of the two wells overlap. 0026_MW104 had a PFOS+PFHxS concentration of 155 µg/L (discussed further in Sections 4 and 5), making it the second-highest PFAS concentration detected in groundwater on-site outside the FFTA. 0026_MW112 was likely hydraulically down or cross-gradient, while 0026_MW88 was upgradient. The absence of these wells impacts the dataset, as they could have provided insight into the presence of a plume or helped determine the location for an additional well.</li> </ul>
<b>An additional surface water geochemical parameter (total dissolved solids (TDS)) was collected at most locations.</b>	TDS can offer insight into the presence or degree of runoff or erosion within the creek catchment. TDS was collected as the water quality meter had the appropriate probe.	The collection of additional water quality parameters has no negative impact on the surface water dataset for the site.

# 3. Methodology

## 3.1 Sampling Methodology

The methodology used for the February 2025 sampling event was completed in accordance with the SAQP (GHD, 2025) and is summarised in Table 4 below.

Table 4 Sampling methodology

Item	Details
Technical guidelines	<p>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).</p> <p>Australian Standard 5667:1998 Water Quality – Sampling, Part 6: Guidance on the Sampling of rivers and streams (AS 566.6:1998).</p> <p>ASC NEPM (NEPM, 2013).</p> <p>PFAS NEMP 2.0 (HEPA, 2020).</p> <p>It is acknowledged that PFAS NEMP 3.0 (HEPA, 2024) was released between the completion of the work and the preparation of this report. However, PFAS NEMP 2.0 (HEPA, 2020) has been retained as the reference guideline for this letter and sampling event, as it was the version specified in the SAQP (GHD, 2025), and all work and laboratory analysis were completed while HEPA, 2020 was still the most current version. It is also noted that there has been no NSW EPA or Defence endorsement of the revised guidelines.</p>
Sampling methodology	<p><b>Groundwater</b></p> <p>The groundwater samples were generally collected from each monitoring well using HydraSleeves™, a no-purge sampling methodology. Disposable high-density polyethylene (HDPE) bailers were used for 3 of the 32 of the wells sampled, two were due to insufficient water column to deploy a HydraSleeve™, one was due to no access restraint to install the Hydrasleeve™ initially. For the wells sampled with bailer, a minimum of three well volumes were removed and water removal continued until stabilisation of water quality parameters were achieved; where recharge is insufficient and there was risk of the well becoming dry, a sample was collected prior to this. HydraSleeves™ with bottom weights only were installed within the screened interval of the wells for a minimum of 4 hours prior to the sampling round as per the SAQP (GHD, 2025). Once sampling was completed, HydraSleeves™ were removed.</p> <p><b>Surface Water</b></p> <p>Surface water samples were collected via ‘grab sample’ at the individual surface water sampling locations from within the water column or approximately 0.5 metres below the surface. Care was taken when sampling so that sediment was not disturbed, and that surface film or floating materials were not captured in the sample.</p> <p>At each location, a new laboratory supplied container was lowered into the water (either by hand or using an extendable sampling pole) with the cap immediately applied once the container was full.</p> <p>The sample containers were labelled with the job number, sample identification and date collected in accordance with the nomenclature set out in the SAQP (GHD, 2025).</p>
Field parameters	<p>Field parameters (pH, EC, redox, DO, TDS and temperature) were measured and recorded for all surface water and groundwater locations. In addition, observations of water quality such as the colour, turbidity level, and the presence/absence of odour or sheen was recorded. Geochemical field parameters were collected using a calibrated water quality meter (WQM). The calibration certificates are provided in Appendix D.</p>
QA/QC Samples	<p>The QA/QC program as per the SAQP (GHD, 2025). The program for this round of sampling includes:</p> <p>For this February 2025 sampling event, the QA/QC samples included:</p> <ul style="list-style-type: none"> <li>– 5 x intra-laboratory duplicates (4 x groundwater 1 x surface water) which met the target frequency.</li> <li>– 5 x inter-laboratory duplicates (4 x groundwater 1 x surface water) which met the target frequency.</li> <li>– 2 x trip blanks, which met the target frequency.</li> <li>– 3 x rinsate blanks which met the required frequency.</li> </ul> <p>The data validation assessment is presented in Appendix C.</p>

## 3.2 Adopted screening criteria

The following guidance documents have been used to assess the data:

- Department of Health (DoH) (2017). Health Based Guidelines Values for PFAS for use in site investigation in Australia.
- Heads of Environmental Protection Authorities (HEPA) (2020). PFAS National Environmental Management Plan (NEMP), Version 2.0 (HEPA, 2020).
- National Environment Protection Council (NEPC) (1999, amended 2013). National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM) (No. 1).
- National Health and Medical Research Council (NHMRC) (2019). Guidance on PFAS in Recreational Water.

The adopted screening criteria to assess the PFAS data in this monitoring program includes both human health and ecological screening criteria, as per the OMP (Defence, 2019) and SAQP (GHD, 2025), the adopted screening criteria is presented in

Table 5.

**Table 5** Summary of adopted screening criteria

Receptor	Pathway	Compound(s)	Criteria	Comment/Reference
Human health	Recreational	PFOS + PFHxS	2 µg/L	NHMRC (2019). These values were adopted by the HEPA NEMP 2.0 (2020).
		PFOA	10 µg/L	
Ecological	Freshwater	PFOS	0.00023 µg/L	The values are from the PFAS NEMP (HEPA, 2020) which endorsed the Australian and New Zealand Guidelines for Fresh and Marine Water Quality.  The 99% species protection level has been applied for high value conservation systems. This approach is <i>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.</i>
		PFOA	19 µg/L	

Results were also compared to the following qualitative triggers for further consideration:

- First time detection of PFAS in a groundwater or surface water location.
- First time exceedance of the applicable screening criteria at that location.
- Check to see if there were any land use changes.

## 3.3 Quality assurance and quality control

The data quality objectives (DQOs) and data quality indicators (DQIs) adopted for these works are presented in the SAQP (GHD, 2025). The data validation assessment is provided in Appendix C.

Quality assurance (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 (NEPM, 2013). Quality control (QC) involves protocols to monitor and measure the effectiveness of QA procedures.

The relative percentage difference (RPD) for the laboratory results was calculated for each duplicate pair, as presented in Table C1 of Appendix C.

Trip blank analytical results are provided in Table C2 of Appendix C. All analytes tested for the trip blanks were less than the LOR for both trip blank samples.

Rinsate blank analytical results are provided in Table C2 of Appendix C. All analytes tested for the rinsate blanks were less than the LOR for all three rinsate samples.

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 has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (DCMM) requirements (Defence, 2018).

## 4. Field observations and results

### 4.1 General observations

The weather conditions and general observations (including activities that may impact the monitoring program) recorded during the February 2025 sampling event completed over three days on 11, 12 and 13 February 2025 and summarised in Table 6 below.

Table 6 General observations

Items	Observations
Weather Conditions	<p>During the sampling event on 11, 12 and 13 February 2025, the weather was observed to be:</p> <ul style="list-style-type: none"> <li>– Mostly dry with 2.2, 0.4 and 0.8 mm of rainfall recorded respectively.</li> <li>– Warm, with a maximum daily temperature of 27.5, 26.7 and 28.8°C respectively.</li> </ul> <p>Cumulative rainfall was recorded to be 18 mm in the 48 hours prior to the sampling event commencing 11 February 2025.</p> <p>An assessment of past sampling events (February event) to this February 2025 event has been carried out for the last four years of data (2021, 2022, 2023 and 2024) with the maximum amount of rainfall in the 48 hours prior to sampling 54.8 mm in 2022 followed by 23 mm in 2021. Little to no rainfall was recorded in the 48 hours prior in 2023 (0 mm) and 2024 (2.6 mm). Flow observations between past events were usually qualitative and categorical (i.e. flow observed or no flow observed) the 2025 event were found to be similar in their recorded description where similar locations were noted as flowing or not flowing.</p> <p>Information obtained from Nowra (Nowra RAN Air AWS Station ID 68072) (Bureau of Meteorology, 2025).</p>
Estate Management Works, Training Activities and/or Construction Works.	<p>Ongoing construction works were observed during the sampling event, including for:</p> <ul style="list-style-type: none"> <li>– The P0010 pavement work upgrades across the east-west runway.</li> <li>– Asphalt batching plant, stockpiling and laydown area is located approximately 85 m south of SW007 and approximately 30 m north-west of MW012 and MW012P.</li> <li>– Earthworks associated with carpark upgrade on the western side of the site, north of the Romeo Facility. This closest point of these earthworks is approximately 85 metres south of SW007.</li> </ul>

### 4.2 Field observations and measurements

The observations and measurements recorded during the field activities for the February 2025 annual sampling event are summarised in Table 7, below.

Table 7 Summary of field observations and measurements

Item	Description
Access and Sample Collection	<p>All surface water samples were accessible and able to be sampled.</p> <p>Most groundwater locations were accessible and able to be sampled except for the following (as detailed in Table 3):</p> <ul style="list-style-type: none"> <li>– 0026_MW030: Lost, likely buried. Approximately 0.5 hours spent trying to locate with metal detector, GPS coordinates and shovel.</li> <li>– 0026_MW046: Lost, likely buried. Known to be lost prior to event. Location last found and sampled February 2023.</li> <li>– 0026_MW088: Destroyed, likely paved over in carpark area, when resurfaced in 2016/2017.</li> <li>– 0026_MW112: Lost/destroyed, when perimeter clearing and fencing upgrades occurred in 2017. Approximately 0.5 hours spent trying to locate with metal detector, GPS coordinates and shovel.</li> </ul>
Water Observations	<p><b>Groundwater</b></p> <p>The following groundwater observations were made:</p>

Item	Description
	<ul style="list-style-type: none"> <li>– Water colour ranged from clear to coloured (pale; brown, orange-brown, orange, yellow, grey, pink). Some locations had turbid water; turbidity estimates were primarily low with one instance of turbid (moderate). Some locations had sedimentation accumulation at the base of the HydraSleeve™ or Bailer when removing the water. Organic flocculation and suspended solids were also noted at some locations.</li> <li>– Three locations MW009, MW026 and MW029 had low to distinct organic/decaying organics odours. No other odours noted for any other groundwater locations.</li> <li>– Field notes are attached in Appendix F.</li> </ul> <p><b>Surface Water</b></p> <p>The following surface water observations were made:</p> <ul style="list-style-type: none"> <li>– Water colour was predominantly clear with low turbidity for all surface water locations where water was flowing. Coloured pale brown or with some turbidity at some locations.</li> <li>– Locations SW005 and SW006 were noted to have foam or bubbles on the surface of the water.</li> <li>– A slight decaying organic odour was noted at the surface water location SW009. No odour was noted at any other location.</li> <li>– Naturally occurring sheens or organic films were noted at SW002, SW007 and SW124.</li> <li>– Twelve locations were observed to be flowing. The six locations where water was not observed to be flowing included SW001, SW007, SW009, SW018, SW123 and SW124.</li> <li>– Other environmental observations including weather, temperature, slope and erosion were recorded on the field sheets, attached in Appendix F. Photographs of the test locations were taken for all surface water locations with the exception of SW106 – where electronic equipment was prohibited.</li> </ul>
Depth to Groundwater and Flow Direction	<p>Depth to groundwater ranged from 0.27 (0026_MW012) and 13.775 (0026_MW003) metres below top of casing (mbTOC). Groundwater elevation ranged between 26.25 m (0026_MW026) and 140.07 (0021_MW004) metres Australian Height Datum (mAHD).</p> <p>Groundwater gauging data is presented on the field sheets in Appendix F. Inferred groundwater contours and groundwater flow direction for the upper aquifer based on field data from the latest sampling event are shown on Figure 9 in Appendix A. The groundwater flow direction is divided across the site, aligning roughly with the north-east / south-west runway. From this divide groundwater is inferred to flow:</p> <ul style="list-style-type: none"> <li>– To the north or west in the Shoalhaven River Basin.</li> <li>– To the south, east or south-east in the Clyde River Basin</li> </ul> <p>This is largely consistent with findings from OMP Sampling Event Reports for February sampling events in 2020 through to 2024 (AECOM, 2020 - 2024). Note that two groundwater monitoring wells (0026_MW009P and 0026_MW012P) were omitted from the contour plan because they are screened within a perched aquifer.</p> <p>Field notes including sample collection depth and details on the monitoring well construction are attached in Appendix F.</p> <p>Inferred surface water flow direction is provided on Figure 10 in Appendix A.</p>
Geochemical Parameters	<p><b>Groundwater</b></p> <p>Groundwater geochemical parameters were measured during the collection of water samples. The readings are presented in Table B1 in Appendix B and are summarised below:</p> <ul style="list-style-type: none"> <li>– Dissolved oxygen ranged from 0.66 mg/L (MW009) to 4.09 mg/L (MW104) indicating poorly oxygenated conditions.</li> <li>– Electrical conductivity ranged from 172.4 µS/cm (MW009P) to 16,205 µS/cm (MW031) indicating freshwater to brackish conditions.</li> <li>– pH ranged from 4.47 (MW017) to 7.08 (MW004) indicating acidic to neutral conditions.</li> <li>– Redox generally ranged from 4.8 mV (MW026) to 565 mV (MW002) indicating low oxidising to oxidising conditions. A redox value of -66.9 mV as recorded at MW005, indicating reducing conditions at that location.</li> <li>– Temperature ranged from 17.1°C (MW026) to 23.1 °C (MW213).</li> <li>– Field notes are attached in Appendix F.</li> </ul> <p><b>Surface Water</b></p> <p>Surface water geochemical parameters were measured during the collection of water samples. The readings are presented in Table B3 in Appendix B and are summarised below:</p>

Item	Description
	<ul style="list-style-type: none"> <li>– Dissolved oxygen ranged from 1.34 mg/L (SW002) to 10.69 mg/L (SW009) indicating poor to well oxygenated conditions.</li> <li>– Electrical conductivity ranged from 117.7 µS/cm (SW020) to 716 µS/cm (SW124) indicating freshwater conditions.</li> <li>– pH generally ranged from 6.26 (SW106) to 7.97 (SW013) indicating neutral to slightly alkaline conditions. SW009 located at the effluent storage dam was an outlier and recorded an alkaline pH of 9.21.</li> <li>– Redox ranged from 132.2 mV (SW002) to 540.1 mV (SW020) indicating low oxidising to oxidising conditions.</li> <li>– Temperature ranged from 19.4°C (SW049) to 29.3°C (SW018).</li> <li>– TDS ranged from 122.9 (SW020) and 454 (SW106) indicating low to moderate concentrations of dissolved solids at sampling locations across the site.</li> </ul> <p>Field notes are attached in Appendix F.</p>

## 4.3 Summary of analytical results

### 4.3.1 Current event

The PFAS groundwater analytical results from this sampling event are presented in Table B2, Appendix B. Additionally, the spatial distribution of PFOS+PFHxS (Figure 5) and PFOA (Figure 6) in groundwater results are presented in Appendix A. In summary, 28 primary groundwater samples were analysed for PFAS compounds:

- 23 primary samples reported PFOS+PFHxS concentrations above the LOR.
- 13 primary samples reported PFOA concentrations above the LOR.
- 22 primary samples reported PFOS concentrations above the LOR
- 10 of 28 primary samples reported concentrations which exceeded the adopted recreational use human health screening criterion for PFOS+PFHxS.
- 22 of 28 primary samples reported PFOS concentrations which exceeded the adopted ecological screening criterion. It should be noted that the LOR for PFOS (0.01ug/L) is greater than the adopted ecological screening criterion (0.00023 ug/L) – six samples were <LOR.
- No samples reported PFOA concentrations which exceeded the adopted recreation human health criterion for PFOA.
- No samples reported PFOA concentrations which exceeded the adopted ecological screening criterion for PFOA.

A comparison of the results to historic groundwater data is summarised in Table 8.

**Table 8** Deviations from historical dataset – groundwater

Item	Sample location	PFOS+PFHxS (µg/L)		PFOA (µg/L)		PFOS (µg/L)	
		Feb 2025	Previous Max	Feb 2025	Previous Max	Feb 2025	Previous Max
First time detections of PFOS+PFHxS, PFOS or PFOA?	0026_MW104 <sup>1</sup>	155	N/A	5.78	N/A	72.2	N/A
	0026_MW117 <sup>1</sup>	1.00	N/A	0.02	N/A	5.13	N/A
	0026_MW213 <sup>1</sup>	9.54	N/A	0.20	N/A	0.43	N/A
New exceedance of human health criteria?	0026_MW104 <sup>1</sup>	155	N/A	N/A	N/A	N/A	N/A
	0026_MW117 <sup>1</sup>	1.00	N/A	N/A	N/A	N/A	N/A
	0026_MW213 <sup>1</sup>	9.54	N/A	N/A	N/A	N/A	N/A
New exceedance of ecological criteria?	0026_MW104 <sup>1</sup>	N/A	N/A	N/A	N/A	72.2	N/A
	0026_MW117 <sup>1</sup>	N/A	N/A	N/A	N/A	5.13	N/A
	0026_MW213 <sup>1</sup>	N/A	N/A	N/A	N/A	0.43	N/A

Item	Sample location	PFOS+PFHxS (µg/L)		PFOA (µg/L)		PFOS (µg/L)	
		Feb 2025	Previous Max	Feb 2025	Previous Max	Feb 2025	Previous Max
New historical maximum	0026_MW009 <sup>2</sup>	141	58	7.6	2.74	94.5	29.9
		208.2	58	8.8	2.74	134.3	29.9
	0026_MW104 <sup>1</sup>	155	N/A	5.78	N/A	72.2	N/A
	0026_MW117 <sup>1</sup>	1.00	N/A	0.02	N/A	5.13	N/A
	0026_MW213 <sup>1</sup>	9.54	N/A	0.20	N/A	0.43	N/A

1 – First time detection, exceedance or new maximum due to this being the first OMP event the location was monitored for PFOS+PFHxS, PFOS and PFOA.

2 – 0026\_MW009 was re-tested via re-extraction and re-analysis due to anomalous concentration at 0026\_MW009. Variation between two sets of results is noted by ALS to be due to sample heterogeneity. Whilst this is not typical of groundwater, suspended particles noted in the field record for this location may have contributed to the difference in results. As PFAS samples are collected in two containers, the laboratory re-extracted water from the second container for re-analysis. The concentrations between both bottles may have been affected by differences in suspended solids between the two containers.

- Three locations (0026\_MW104, 0026\_MW117 and 0026\_MW213) recorded first time detections, exceedances of the adopted screening criteria and new historical maximums due to this being the first OMP event the locations were monitored for PFOS+PFHxS, PFOS and PFOA.
- 0026\_MW009 recorded a new historical maximum, approximately 2.5 times the previously recorded maximum at the location. The sample was retested, the results of which are presented in Table 8 above and Table B2 in Appendix B.
- No other first-time detections of PFOS+PFHxS, PFOS and/or PFOA, new exceedances of the adopted human health or ecological criteria, or new historical maximums were reported for groundwater.
- Laboratory results are attached in Appendix E.

The PFAS surface water analytical results from this sampling event are presented in Table B4 in Appendix B. Additionally, the spatial distribution of PFOS+PFHxS (Figure 7) and PFOA (Figure 8) results in surface water are presented in Appendix A. In summary, 18 primary surface water samples were analysed for PFAS compounds:

- 15 of 18 primary samples reported PFOS+PFHxS concentrations above the LOR.
- 14 of 18 primary samples reported PFOA concentrations above the LOR.
- 17 of 18 primary samples reported PFOS concentrations above the LOR.
- 10 primary samples exceeded the adopted recreational use human health screening criteria for PFOS+PFHxS.
- No samples exceeded the adopted recreational human health screening criterion for PFOA.
- No samples exceeded the adopted ecological screening criterion for PFOA.
- 17 of 18 primary samples reported PFOS concentrations above the ecological screening criteria.
- A comparison of the results to historic surface water data is summarised in Table 9.

Table 9 Deviations from historical surface water dataset

Item	Sample location	PFOS+PFHxS (µg/L)		PFOA (µg/L)		PFOS (µg/L)	
		Feb 2025	Previous Max	Feb 2025	Previous Max	Feb 2025	Previous Max
First time detections of PFOS+PFHxS, PFOS or PFOA?	SW106 <sup>1</sup>	9.53	N/A	0.24	N/A	5.13	N/A
	SW123 <sup>1</sup>	<0.01	N/A	<0.01	N/A	<0.01 <sup>2</sup>	N/A
	SW124 <sup>1</sup>	4.60	N/A	0.09	N/A	2.40	N/A
New exceedance of	SW106 <sup>1</sup>	9.53	N/A	N/A	N/A	N/A	N/A

Item	Sample location	PFOS+PFHxS (µg/L)		PFOA (µg/L)		PFOS (µg/L)	
		Feb 2025	Previous Max	Feb 2025	Previous Max	Feb 2025	Previous Max
human health criteria?	SW124 <sup>1</sup>	4.60	N/A	N/A	N/A	N/A	N/A
New exceedance of ecological criteria?	SW106 <sup>1</sup>	N/A	N/A	N/A	N/A	5.13	N/A
	SW123 <sup>1</sup>	N/A	N/A	N/A	N/A	<0.01 <sup>2</sup>	N/A
	SW124 <sup>1</sup>	N/A	N/A	N/A	N/A	2.40	N/A
New historical maximum	SW049	1.27	0.13	N/A	N/A	0.81	0.07
	SW065	5.08	3.8	0.1	0.08	2.42	2.1
	SW106 <sup>1</sup>	9.53	N/A	0.24	N/A	5.13	N/A
	SW123 <sup>1</sup>	<0.01	N/A	<0.01	N/A	<0.01	N/A
	SW124 <sup>1</sup>	4.60	N/A	0.09	N/A	2.40	N/A

**Notes:**

1 – First time detection, exceedance or new maximum due to this being the first OMP event the location was monitored for PFOS+PFHxS, PFOS and PFOA.

2 – Concentration < LOR, but the LOR > assessment criteria

- Three locations (0026\_SW106, 0026\_SW123 and 0026\_SW124) recorded first time detections, exceedances of the adopted screening criteria and new historical maximums due to this being the first OMP event the locations were monitored for PFAS:
  - 0026\_SW049 and 0026\_SW065 recorded new historical maximums.
  - 0026\_SW049 approximately an order of magnitude higher than the previously recorded maximum and last time the location was monitored for PFAS noting that was some time ago in May 2016.
- 0026\_SW065 recorded a value within the same order of magnitude as the previously recorded maximum for the location.
- No other first-time detections of PFOS+PFHxS, PFOS and/or PFOA, new exceedances of the adopted human health or ecological criteria, or new historical maximums were reported for surface water.
- Laboratory results are attached in Appendix E.

### 4.3.2 Previous data

All historic groundwater sampling results are presented in Table B5 in Appendix B.

All historic surface water sampling results are presented in Table B6 in Appendix B.

# 5. Summary and recommendations

## 5.1 Summary of monitoring event

The February 2025 sampling event was completed over three days, 11, 12 and 13 February 2025. The findings and the recommended actions are summarised in Table 10 below.

Table 10 Summary of sampling event

Item	Comment	Recommended Action
Access to sampling locations	All locations were accessible.	Nil
Location unable to be located, inaccessible or dry	Four groundwater wells were unable to be located as discussed in Table 3. Three wells had insufficient water column to deploy HydraSleeves™ and were sampled with bailer.	For groundwater wells where the lack of data is considered to have a material impact on the dataset, the following should be considered: <ul style="list-style-type: none"> <li>– The sampling of alternate wells in the vicinity that could close the potential data gaps (if possible).</li> <li>– The engagement of a surveyor to locate the exact location and recover 0026_MW030 and 0026_MW046 – replacement in the event they are found destroyed.</li> <li>– The installation of a replacement groundwater well or wells for 0026_MW088 and 0026_MW112.</li> </ul>
Analytical results	28 groundwater primary samples were analysed. 18 surface water primary samples were analysed.	Locations will be sampled again during the next scheduled sampling event to continue monitoring of the location as per the OMP. Locations added to this OMP event that were able to be located (0026_MW104 and 0026_MW213) should be considered for inclusion in the OMP beyond this sampling event.
First-time detections of PFOS+PFHxS, PFOS and/or PFOA	The following first-time detections of PFOS+PFHxS, PFOS and/or PFOA were reported: <ul style="list-style-type: none"> <li>– Three groundwater locations.</li> <li>– Three surface water locations.</li> </ul> These were all new detections due to the first-time monitoring of the locations.	These locations will continue to be monitored as part of the OMP. Locations added to this OMP event that were able to be located (0026_MW104 and 0026_MW213) should be considered for inclusion beyond this sampling event.
New exceedance of adopted human health screening criteria	The following new exceedances of the adopted human health screening criteria for PFOS+PFHxS, PFOS and/or PFOA were reported: <ul style="list-style-type: none"> <li>– Three groundwater locations.</li> <li>– Two surface water locations.</li> </ul> These were all new exceedances due to the first-time monitoring of the locations.	The two locations that were scheduled additionally for this event and that were located (0026_MW104 and 0026_MW213) should be considered for inclusion beyond this sampling event.
New exceedance of adopted ecological screening criteria	The following new exceedances of the adopted ecological screening criteria for PFOS+PFHxS, PFOS and/or PFOA were reported: <ul style="list-style-type: none"> <li>– Three groundwater locations.</li> <li>– Two surface water locations.</li> </ul> These were all new exceedances due to the first-time monitoring of the locations.	All new locations should be incorporated into the OMP moving forward.

Item	Comment	Recommended Action
New historical Maximums	<p>The following new historical maximums of PFOS+PFHxS, PFOS and/or PFOA were reported:</p> <ul style="list-style-type: none"> <li>- Four groundwater locations. <ul style="list-style-type: none"> <li>• 0026_MW009 and 0026_MW104 in particular reported relatively high concentrations.</li> </ul> </li> <li>- Five surface waters locations.</li> </ul>	<p>Locations will be sampled again during the next scheduled sampling event to continue monitoring of the location as per the OMP.</p> <p>Further investigation to the source of PFAS at 0026_MW104 should be considered.</p>

## 5.2 Upcoming sampling events

The next OMP sampling event is scheduled for August 2025, which is a biannual surface water monitoring event.

## 5.3 Upcoming ongoing monitoring report

The next OMR is scheduled to be delivered in Q4 2025 covering data collected within the 12 months sampling period.

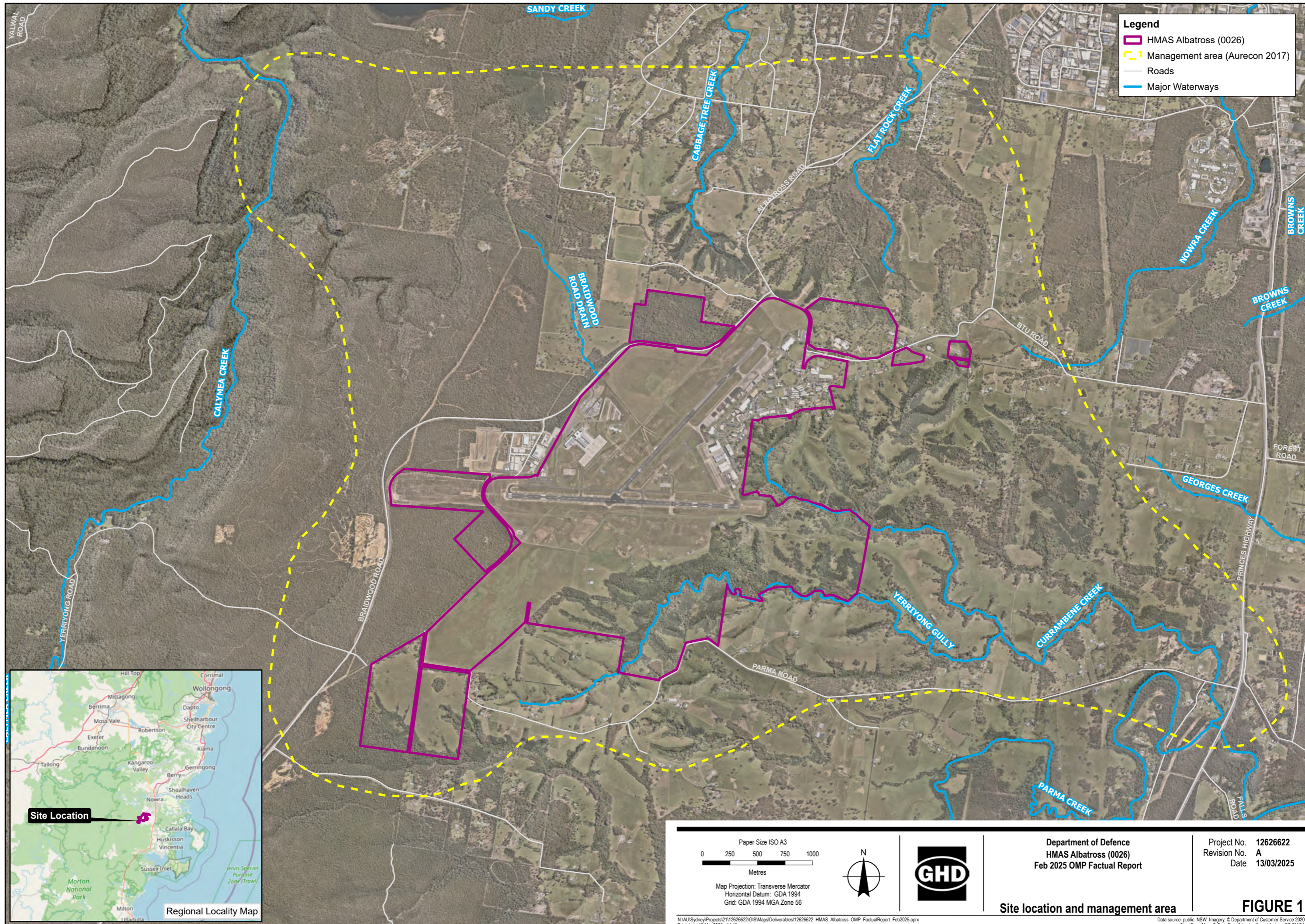
## 6. References

- AECOM. (2020 - 2024). *Ongoing Monitoring Program - Reports for sampling events between December 2019 - February 2024*.
- Defence. (2018). *Contamination Management Manual (DCMM), Amended June 2021*.
- Defence. (2019). *PFAS Ongoing Monitoring Plan*.
- Defence. (2024). *Ongoing Monitoring Program Reporting Guidance*. 29 February 2024.
- GHD. (2025). *Sampling and Analysis Quality Plan, HMAS Albatross*. 15 January.
- HEPA. (2020). *PFAS National Environmental Management Plan Version 2.0*. (NEMP): Heads of EPA Australia and New Zealand.
- NEPM. (2013). *National Environment Protection (Assessment of Site Contamination) Measure*.

# Appendices

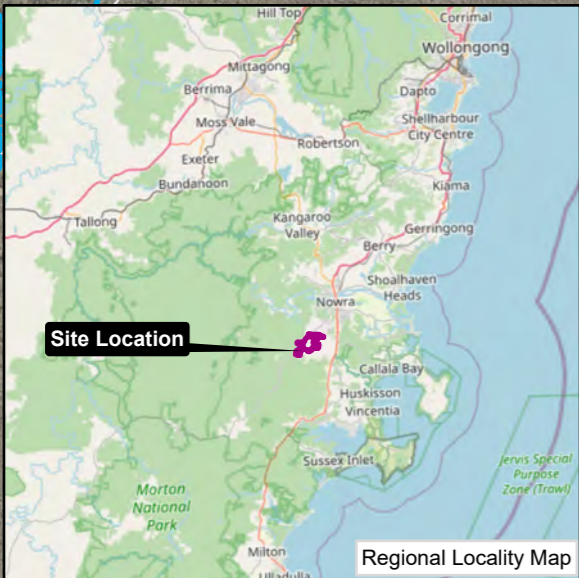
# Appendix A

Figures



**Legend**

- HMAS Albatross (0026)
- Management area (Aurecon 2017)
- Roads
- Major Waterways

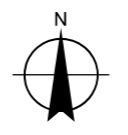


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Grid: GDA 1994 MGA Zone 56



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Revision No. A  
Date 13/03/2025

**Site location and management area**

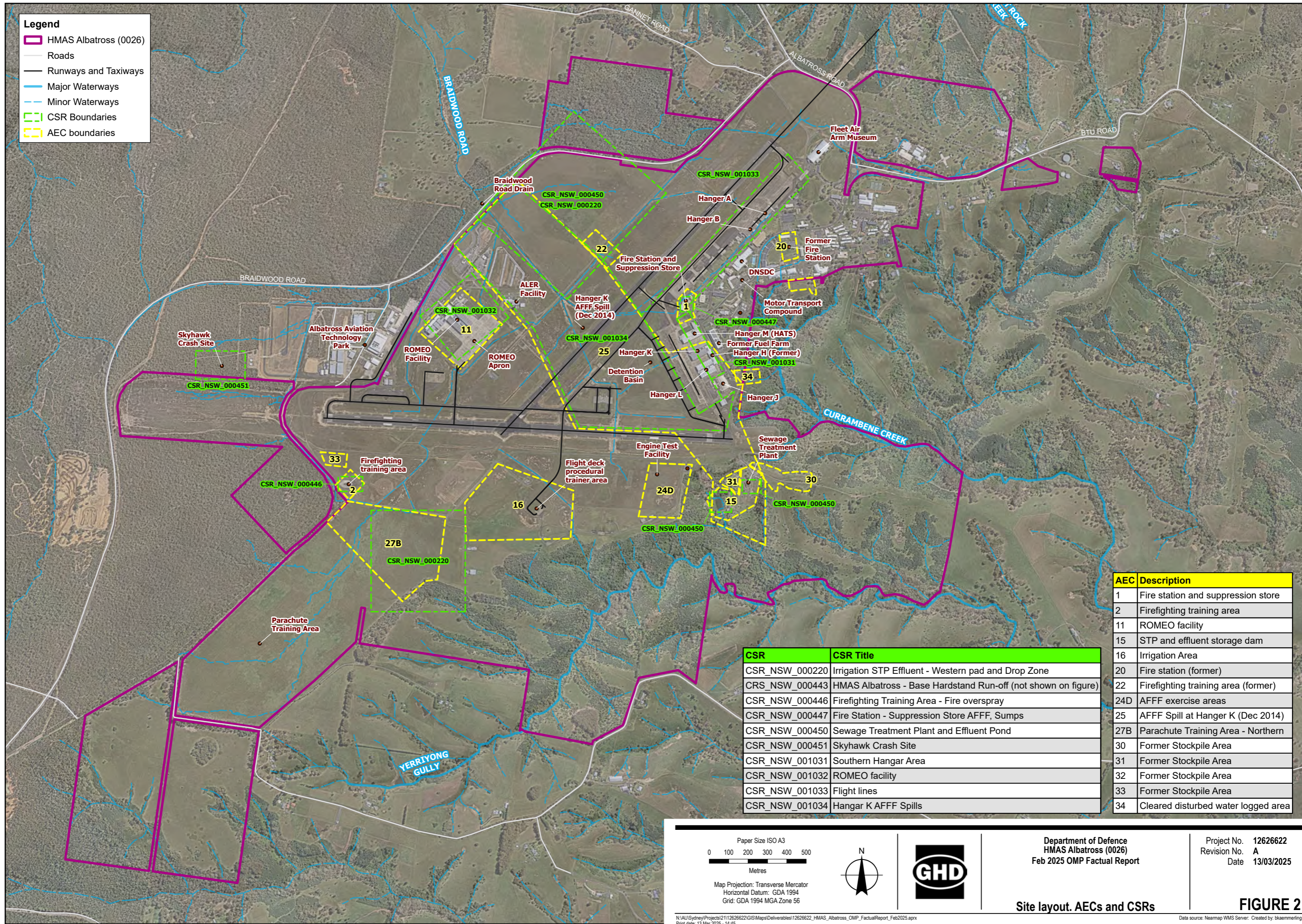
**FIGURE 1**

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Data source: public, NSW, Imagery: © Department of Customer Services 2020  
OpenStreetMap: © OpenStreetMap (and) contributors, CC-BY-SA  
Nearmap WMS Server: . Created by: bkaemmerling

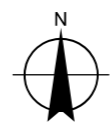
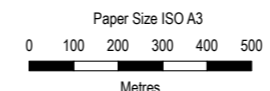
**Legend**

- HMAS Albatross (0026)
- Roads
- Runways and Taxiways
- Major Waterways
- Minor Waterways
- CSR Boundaries
- AEC boundaries



AEC	Description
1	Fire station and suppression store
2	Firefighting training area
11	ROMEEO facility
15	STP and effluent storage dam
16	Irrigation Area
20	Fire station (former)
22	Firefighting training area (former)
24D	AFFF exercise areas
25	AFFF Spill at Hanger K (Dec 2014)
27B	Parachute Training Area - Northern
30	Former Stockpile Area
31	Former Stockpile Area
32	Former Stockpile Area
33	Former Stockpile Area
34	Cleared disturbed water logged area

CSR	CSR Title
CSR_NSW_000220	Irrigation STP Effluent - Western pad and Drop Zone
CRS_NSW_000443	HMAS Albatross - Base Hardstand Run-off (not shown on figure)
CSR_NSW_000446	Firefighting Training Area - Fire overspray
CSR_NSW_000447	Fire Station - Suppression Store AFFF, Sumps
CSR_NSW_000450	Sewage Treatment Plant and Effluent Pond
CSR_NSW_000451	Skyhawk Crash Site
CSR_NSW_001031	Southern Hangar Area
CSR_NSW_001032	ROMEEO facility
CSR_NSW_001033	Flight lines
CSR_NSW_001034	Hangar K AFFF Spills



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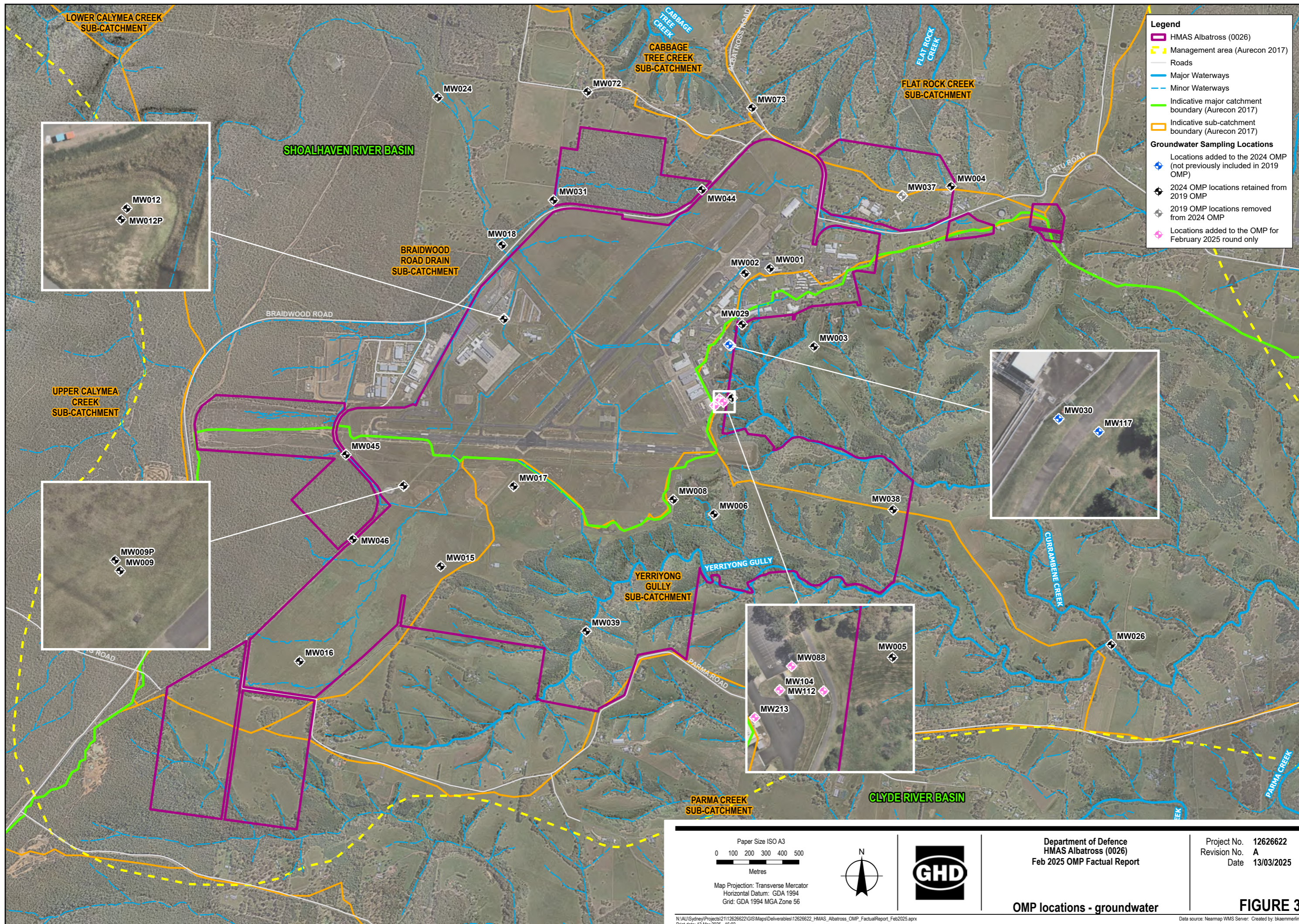
Project No. 1262622  
Revision No. A  
Date 13/03/2025

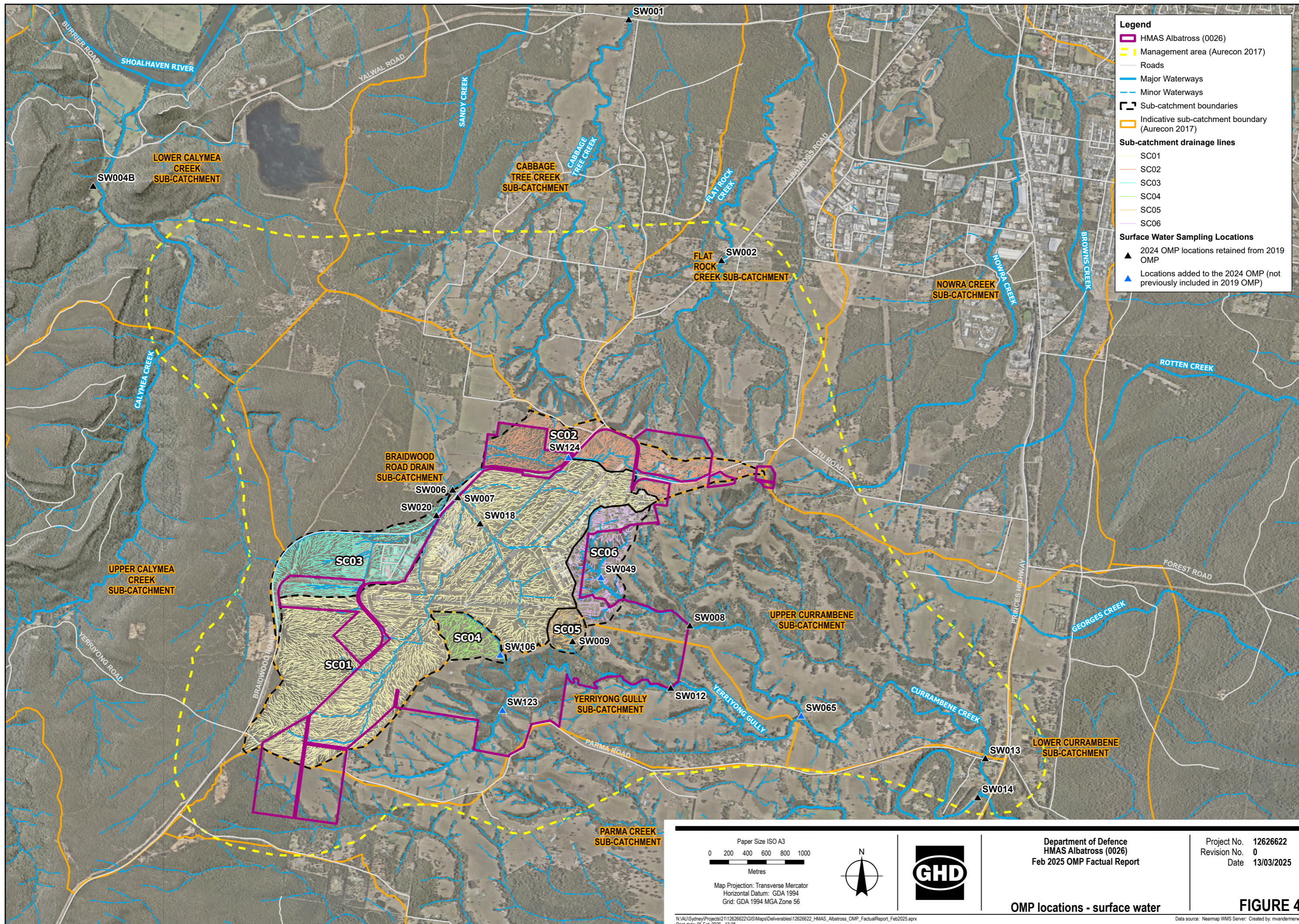
Site layout. AECs and CSRs

FIGURE 2

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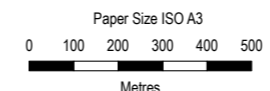
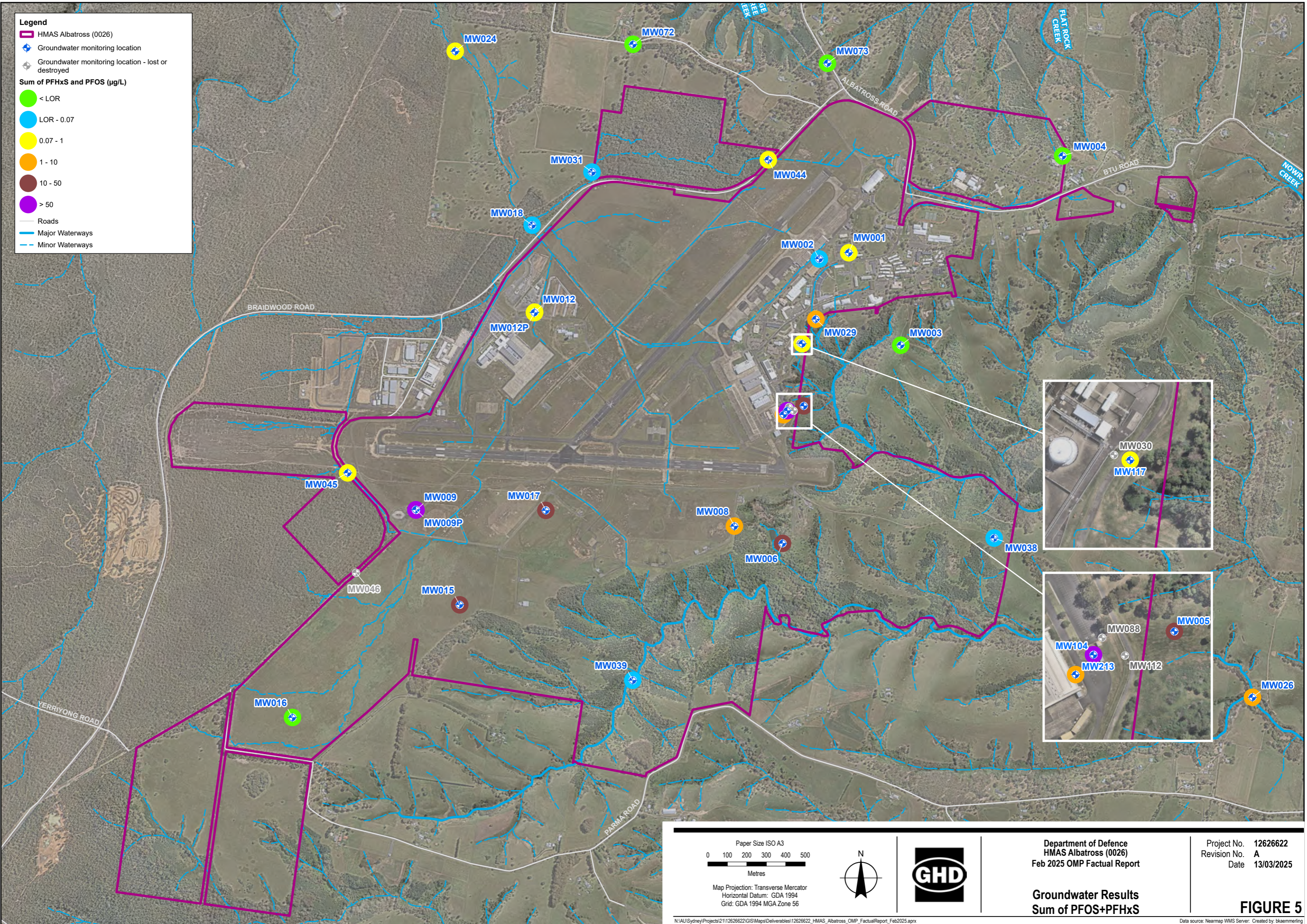
**Legend**

- HMAS Albatross (0026)
- Groundwater monitoring location
- Groundwater monitoring location - lost or destroyed

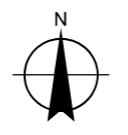
**Sum of PFHxS and PFOS (µg/L)**

- < LOR
- LOR - 0.07
- 0.07 - 1
- 1 - 10
- 10 - 50
- > 50

- Roads
- Major Waterways
- Minor Waterways



Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 56



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**Groundwater Results  
 Sum of PFOS+PFHxS**

Project No. 1262622  
 Revision No. A  
 Date 13/03/2025

**FIGURE 5**

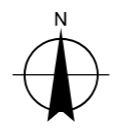
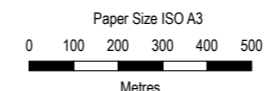
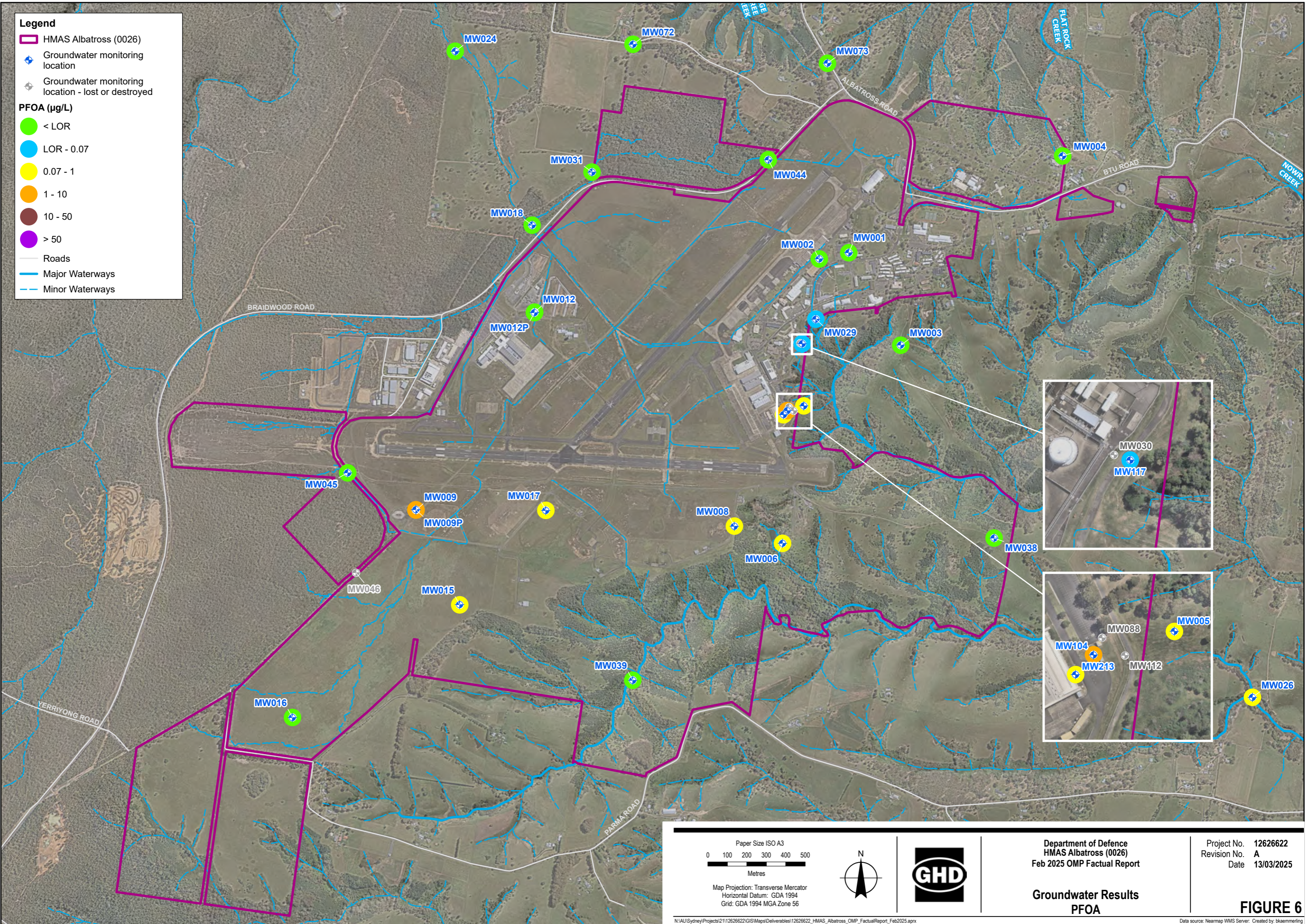
**Legend**

- HMAS Albatross (0026)
- + Groundwater monitoring location
- + Groundwater monitoring location - lost or destroyed

**PFOA (µg/L)**

- < LOR
- LOR - 0.07
- 0.07 - 1
- 1 - 10
- 10 - 50
- > 50

- Roads
- Major Waterways
- Minor Waterways



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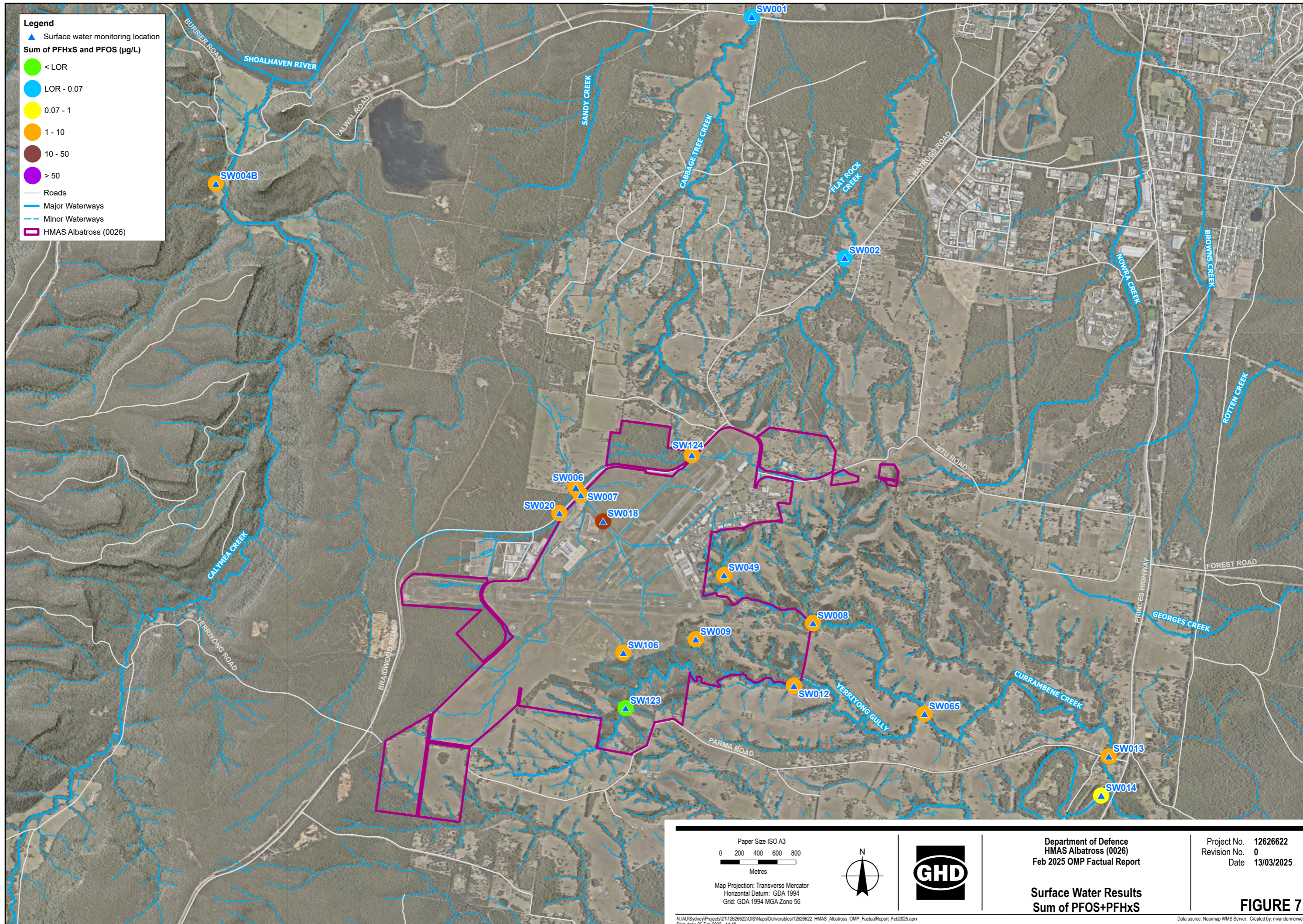
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Date 13/03/2025

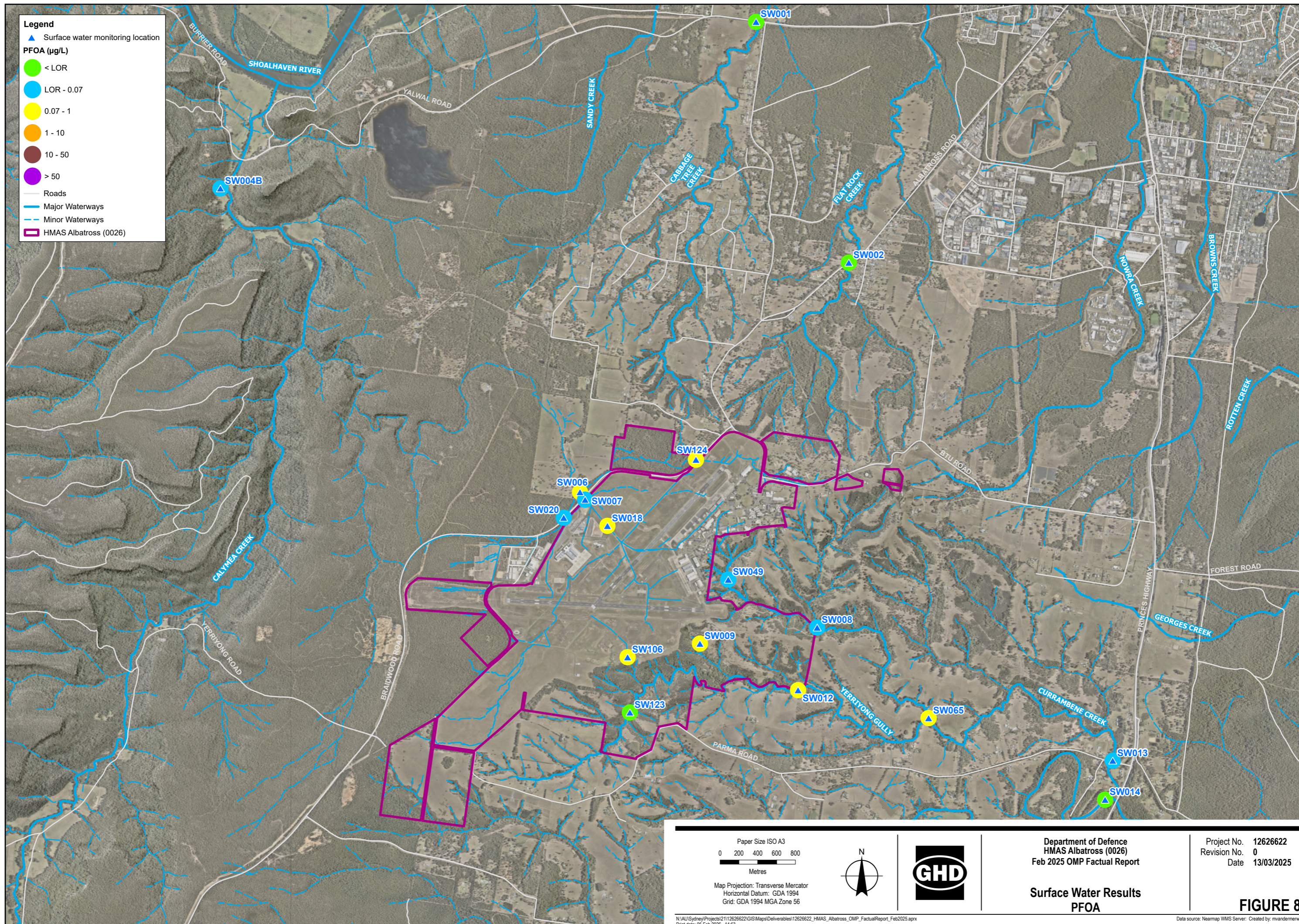
**Groundwater Results  
PFOA**

**FIGURE 6**

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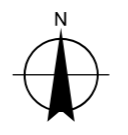
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Surface Water Results  
 PFOA

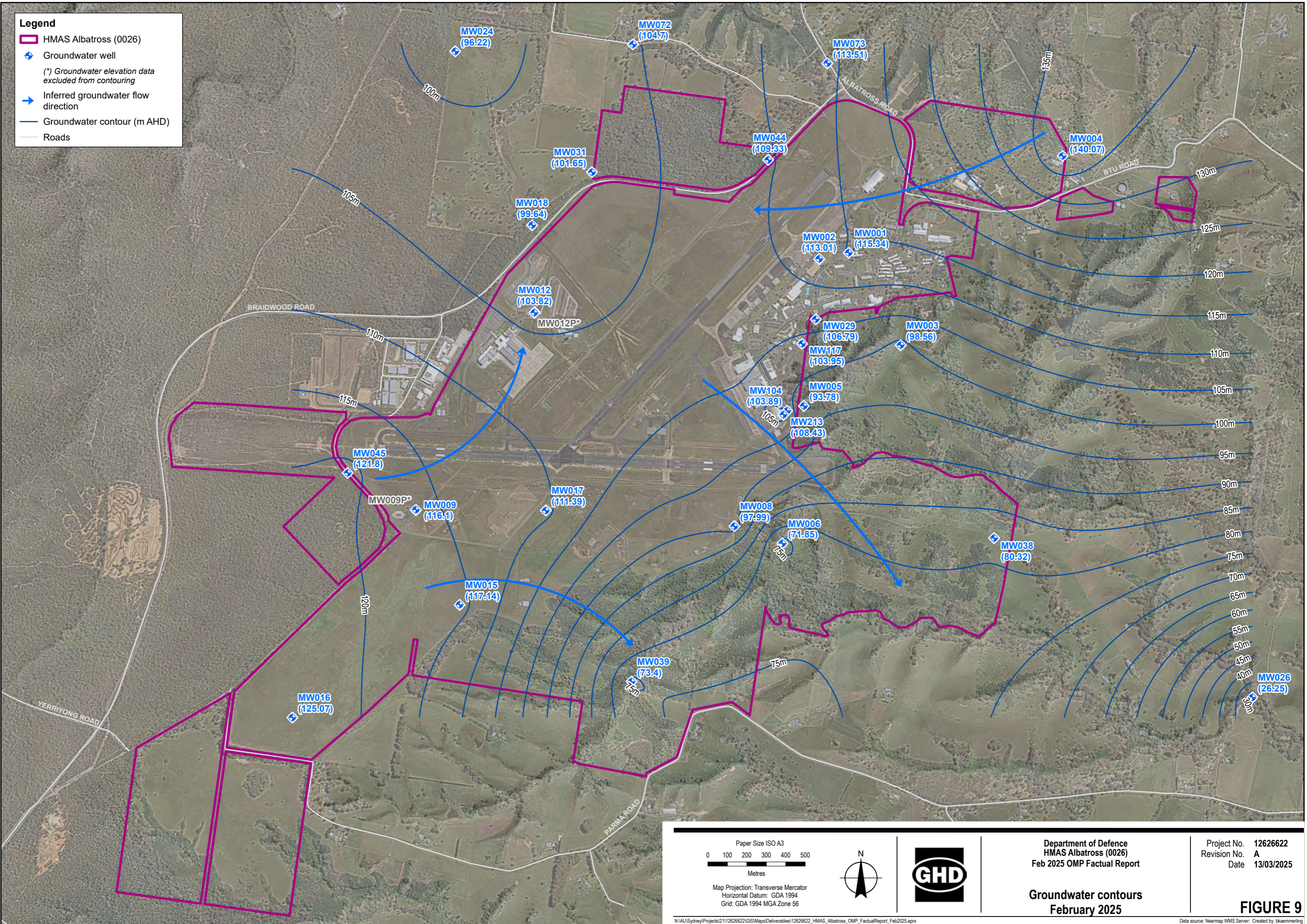
Project No. 1262622  
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 Date 13/03/2025

**FIGURE 8**

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**Legend**

- ▭ HMAS Albatross (0026)
- ⊕ Groundwater well
- (\*)* Groundwater elevation data excluded from contouring
- ➔ Inferred groundwater flow direction
- Groundwater contour (m AHD)
- Roads

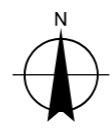


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Feb 2025 OMP Factual Report

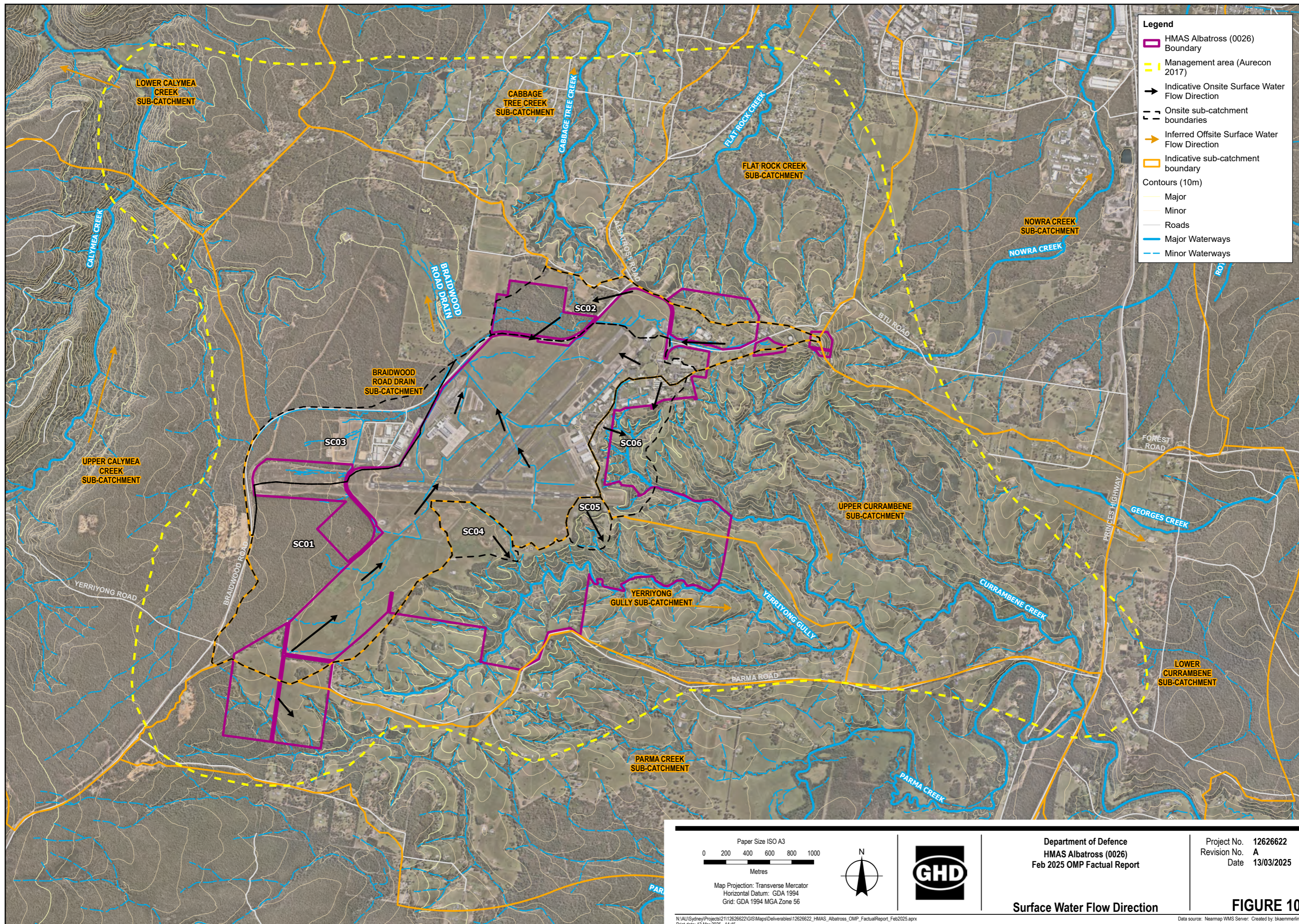
Groundwater contours  
February 2025

Project No. 1262622  
Revision No. A  
Date 13/03/2025

**FIGURE 9**

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Data source: Nearam WMS Server. Created by: bkaemmerling



# Appendix B

Results tables



EQL	Field data		Field Parameters				
	Total Well Depth	Standing Water Level	pH (Field)	Electrical conductivity (field)	Dissolved Oxygen (Field)	Redox (Field)	Temperature (Field)
	m bTOC	m bTOC	pH units	µS/cm	mg/L	mV	°C
EQL	0.05	0.05	0.01	0.1	0.01	0.01	0.1

Location	Date/Time	Field ID	Sample Comments	Sample method	Sample depth							
MW001	13 Feb 2025 12:47PM	0026_MW001_250212	Clear, no odour or sheen, some brown sediment in bottom of HS.	Hydrasleeve	6.5	9.98	1.285	6.84	5,228	0.77	522.1	22
MW002	13 Feb 2025 12:33PM	0026_MW002_250212	Clear, no odour or sheen, no turbidity.	Hydrasleeve	4	9.600	1.33	6.57	2,751	2.25	565	22
MW003	12 Feb 2025 09:25AM	0026_MW003_250212	Clear, non turbid, no odour, no sheen, trace particulate matter.	Hydrasleeve	18	22.2	13.775	6.57	9,091	1.03	64.5	19.1
MW004	13 Feb 2025 06:40AM	0026_MW004_250213	Clear, slightly cloudy, low turbidity, no sheen, no odour, trace sediment in base.	Hydrasleeve	7	9.445	4.065	7.08	2,349	1.91	18.7	18.7
MW005	12 Feb 2025 10:27AM	0026_MW005_250212	Clear, non-turbid, pale brown towards base, no sheen, no odour, trace sediment.	Hydrasleeve	6	6.54	5.335	6.55	788	1.3	-66.9	18.9
MW006	12 Feb 2025 12:30PM	0026_MW006_250212	Pale brown, no odour, no sheen, suspended solids, low turbidity.	Hydrasleeve	7.5	8.02	5.38	5.85	331.3	0.97	416.5	19.6
MW008	12 Feb 2025 06:58AM	0026_MW008_250212	Pale brown, slightly cloudy, no odour or sheen, low turbidity.	Hydrasleeve	8.75	9.49	6.925	5.29	299.6	1.46	319.5	19.7
MW009	12 Feb 2025 07:52AM	0026_MW009_250212	Clear, some suspended particles, mild organic odour, no sheen.	Hydrasleeve	13	15.98	0.535	6.13	415	0.66	48	19.4
MW009P	12 Feb 2025 08:07AM	0026_MW009P_250212	Clear, pale orange brown towards base of sleeve, no odour or sheen.	Hydrasleeve	2	2.42	0.66	4.76	172.4	0.99	208.9	21.4
MW012	12 Feb 2025 08:43AM	0026_MW012_250212	Clear, no odour or seen, slight pale yellow colour.	Hydrasleeve	10	12.99	0.27	6.13	205.1	1.32	185.5	19.9
MW012P	12 Feb 2025 08:29AM	0026_MW012P_250212	Clear, no odour or sheen, orange-brown flocculation at base of sleeve.	Hydrasleeve	4.5	5.3	0.575	4.81	1,348	0.84	232.8	20.9
MW015	12/02/2025 01:36PM	0026_MW015_250212	Clear to pale brown at base, non- turbid, no sheen, no odour, trace sediment.	Hydrasleeve	10	13.3	2.035	6.22	379.1	1.39	427	19.4
MW016	12 Feb 2025 02:11PM	0026_MW016_250212	Pale grey towards the base of sleeve, no odour or sheen, low turbidity.	Hydrasleeve	8	6.925	0.97	5.84	6,655	1.29	168.1	21.2
MW017	12 Feb 2025 07:22AM	0026_MW017_250212	Clear, no odour or sheen, bottomed 25% of sleeve becoming pale brown.	Hydrasleeve	11	14.28	1.09	4.47	457.2	1.19	321.5	19.1
MW018	13 Feb 2025 07:00AM	0026_MW018_250213	Clear to pale brown at base of HS, low turbidity, no sheen, no odour, trace sediment in base.	Hydrasleeve	10	13.83	1.14	6.78	5,798	1.07	375.9	18.4
MW024	12 Feb 2025 09:25AM	0026_MW024_250211	Pale brown, low turbidity, some sediment, no odour, no sheen.	Hydrasleeve	4	10.8	0.8	6.8	938	0.8	73.7	21.4
MW026	13 Feb 2025 08:59AM	0026_MW026_250213	Clear, decaying organic odour, no sheen, some suspended particles within water column. Some persistent bubbles forming at surface of water. Fast recharge, >3 well volumes purged, parameters stable, samples collected.	Bailer	6	8.54	5.44	6.8	721	1.42	4.8	17.1
MW029	12 Feb 2025 09:40AM	0026_MW029_250212	Clear, pale grey towards base, distinct organics odour, no sheen, trace sediment.	Hydrasleeve	7	8.37	3.36	6.57	11,261	0.84	107.2	19.7
MW031	11 Feb 2025 08:59AM	0026_MW031_250211	Pale orange colour, no odour or sheen. Orange sediment towards base of Hydrasleeve.	Hydrasleeve	4	5.82	1.735	4.93	16,205	1.4	220.4	21.7
MW038	12 Feb 2025 11:17AM	0026_MW038_250212	Clear, non-turbid, no sheen, no odour, trace sediment at base of HS.	Hydrasleeve	7.6	7.74	6.065	6.83	1,021	3.85	432.5	20.3
MW039	13 Feb 2025 12:16PM	0026_MW039_250211	Cloudy pale brown, no odour or sheen, low turbidity.	Bailer	2	2.4	1.306	6.28	3,537	1.16	172.2	21.9
MW044	13 Feb 2025 07:35AM	0026_MW044_250213	Clear, pale yellow colour, no odour or sheen.	Hydrasleeve	7	7.895	2.59	6.58	320.5	0.87	402.7	19.5
MW045	12 Feb 2025 02:47PM	0026_MW045_250212	Pale pink darkening towards base of sleeve. no odour or sheen, low turbidity.	Hydrasleeve	7	9.265	2.68	4.76	271	1.93	397.8	20.8
MW072	13 Feb 2025 07:50AM	0026_MW072_250213	Clear, pale yellow colour, no odour or sheen, no sediment. Bubbles and foams up when sampling water.	Hydrasleeve	6	7.65	3.41	6.63	6,565	2.65	441.6	20
MW073	13 Feb 2025 08:15AM	0026_MW073_250213	Pale yellow/ brown colour, no odour or sheen, no sediment.	Hydrasleeve	10	11.41	7.405	6.88	3,395	1.81	289.5	19.7
MW104	12 Feb 2025 02:25PM	0026_MW104_250212	Slightly cloudy, no odour or sheen.	Hydrasleeve	8	9.225	6.215	5.03	803	4.09	484.2	20.7
MW117	12 Feb 2025 10:12AM	0026_MW117_250212	Cloudy brown, turbid, no odour or sheen. Very low water level, samples collected.	Bailer	4.4	4.44	4.23	5.93	287.3	2.43	72.3	22.7
MW213	13 Feb 2025 12:15PM	0026_MW213_250213	Clear, non-turbid, no odour, no sheen, nom sediment.	Hydrasleeve	5	6.04	1.48	4.66	308.1	2.58	549.8	23.1

Notes

mV            millivolts  
mg/L        milligrams per Litre  
°C            degrees Celsius  
µS/cm      microSiemens per centimetre



EQL	PFAS				PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Perfluoroalkyl Sulfonamide						PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums				
	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluorheptane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPPS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDDA)	Perfluorooctanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotridecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	N-Ethyl perfluorooctane sulfonamide (EFOFA)	N-Triethylperfluorooctane sulfonamide (EFOFAA)	N-Ethyl perfluorooctane sulfonamide (EFOFSA)	N-Triethylperfluorooctane sulfonamide (EFOFSA)	N-Ethyl perfluorooctane sulfonamide (EFOFSA)	N-Triethylperfluorooctane sulfonamide (EFOFSA)	Perfluorooctane sulfonamide (FOFA)	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)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	
NHMRC 2019 Recreational Water PFAS Guidelines	10			2							0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.02	0.05	0.05	0.02	0.05	0.02	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	19	0.00023																																		

Location

Code	Date	Field ID	Sample Type	Lab Report	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluorheptane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPPS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDDA)	Perfluorooctanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotridecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	N-Ethyl perfluorooctane sulfonamide (EFOFA)	N-Triethylperfluorooctane sulfonamide (EFOFAA)	N-Ethyl perfluorooctane sulfonamide (EFOFSA)	N-Triethylperfluorooctane sulfonamide (EFOFSA)	N-Ethyl perfluorooctane sulfonamide (EFOFSA)	N-Triethylperfluorooctane sulfonamide (EFOFSA)	Perfluorooctane sulfonamide (FOFA)	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)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*				
MW001	12 Feb 2025	0026_MW001_250212	Normal	ES2504684	<0.01	0.33	0.06	0.39	0.39	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.39	-	-		
MW002	12 Feb 2025	0026_MW002_250212	Normal	ES2504684	<0.01	0.03	<0.01	0.03	0.03	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	-	-	
MW003	12 Feb 2025	0026_MW003_250212	Normal	ES2504684	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	-
MW004	13 Feb 2025	0026_MW004_250213	Normal	ES2504684	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	-	
MW005	12 Feb 2025	0026_MW005_250212	Normal	ES2504684	0.43	7.71	5.55	13.3	18.1	0.81	<0.02	-	0.31	-	0.74	0.2	<0.02	<0.02	0.19	1.43	<0.02	0.34	<0.05	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	16.7	-	-	
MW006	12 Feb 2025	0026_MW006_250212	Normal	ES2504684	0.23	6.79	4.61	11.4	14.0	0.34	<0.02	-	0.21	-	0.42	0.1	<0.02	<0.02	0.10	0.82	<0.02	0.22	<0.05	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	13.2	-	-		
MW008	12 Feb 2025	0026_MW008_250212	Normal	ES2504684	0.25	2.44	6.78	9.22	13.2	0.65	<0.02	-	0.29	-	0.65	<0.1	<0.02	<0.02	0.19	1.45	<0.02	0.22	<0.05	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	12.0	-	-	
	12 Feb 2025	0026_QC101_250212	Intra-lab Duplicate	ES2504684	0.39	3.59	10.4	14.0	20.5	1.00	<0.02	-	0.47	-	1.22	0.1	<0.02	<0.02	0.32	2.33	<0.02	0.33	<0.05	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	18.5	-	-	
MW008	12 Feb 2025	0026_QC201_25012	Inter-lab Duplicate	1190103	0.43	4.2	14	18.2	25.15	1.3	<0.01	<0.01	0.44	0.35	1.3	0.10	<0.01	<0.01	0.32	2.4	<0.01	0.31	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	23.06	4.63	18.63		
	12 Feb 2025	0026_MW009_250212	Normal	ES2504684	7.60	94.5	46.5	141	209	8.60	<0.02	-	4.41	-	7.15	3.4	<0.02	<0.02	4.16	23.1	0.11	4.66	<0.05	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.16	0.07	<0.05	193	-	-
MW009	12 Feb 2025	0026_MW009_250212	Re-test	-	8.8 <sup>#1</sup>	134.3 <sup>#1</sup>	73.8 <sup>#1</sup>	208.2 <sup>#1</sup>	-	10.0 <sup>#1</sup>	<0.02 <sup>#1</sup>	-	5.4 <sup>#1</sup>	-	7.6 <sup>#1</sup>	3.8 <sup>#1</sup>	<0.02 <sup>#1</sup>	-	4.7 <sup>#1</sup>	29.6 <sup>#1</sup>	0.1 <sup>#1</sup>	5.1 <sup>#1</sup>	-	-	<0.02 <sup>#1</sup>	-	-	<0.02 <sup>#1</sup>	-	-	<0.02 <sup>#1</sup>	-	-	<0.02 <sup>#1</sup>	-	0.2 <sup>#1</sup>	0.1 <sup>#1</sup>	-	-	-	-		
	12 Feb 2025	0026_MW009P_250212	Normal	ES2504684	7.04	173	40.2	213	282	4.66	0.62	-	3.14	-	4.57	3.5	0.44	<0.02	4.11	27.4	0.53	5.31	<0.05	<0.02	0.07	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	0.23	<0.05	0.49	1.35	<0.05	267	-	-			
MW009P	12 Feb 2025	0026_MW009P_250212	Re-test	-	9.41 <sup>#1</sup>	266 <sup>#1</sup>	68.7 <sup>#1</sup>	334.7 <sup>#1</sup>	-	7.11 <sup>#1</sup>	0.38 <sup>#1</sup>	-	4.11 <sup>#1</sup>	-	6.47 <sup>#1</sup>	4.76 <sup>#1</sup>	0.69 <sup>#1</sup>	-	6.27 <sup>#1</sup>	39.8 <sup>#1</sup>	0.88 <sup>#1</sup>	8.5 <sup>#1</sup>	-	-	<0.02 <sup>#1</sup>	-	-	<0.02 <sup>#1</sup>	-	-	<0.02 <sup>#1</sup>	-	-	0.38 <sup>#1</sup>	<0.05	0.88 <sup>#1</sup>	3.26 <sup>#1</sup>	-	-	-	-		
MW012	12 Feb 2025	0026_MW012_250212	Normal	ES2504684	<0.01	0.06	0.04	0.10	0.10	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.10	-	-		
	13 Feb 2025	0026_QC102_250213	Intra-lab Duplicate	ES2504684	<0.01	0.06	0.04	0.10	0.10	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.10	-	-		
MW012P	13 Feb 2025	0026_QC202_25013	Inter-lab Duplicate	1190103	<0.01	0.08	0.05	0.13	0.14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.14	0.08	0.13		
MW012P	12 Feb 2025	0026_MW012P_250212	Normal	ES2504684	<0.01	0.10	0.01	0.11	0.11	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	-	-	
MW015	12 Feb 2025	0026_MW015_250212	Normal	ES2504684	0.48	3.35	22.3	25.6	38.5	3.47	<0.02	-	0.70	-	3.23	0.2	<0.02	<0.02	0.31	2.12	<0.02	0.36	<0.05	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	32.6	-	-	
MW016	12 Feb 2025	0026_MW016_250212	Normal	ES2504684	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	-	-	
MW017	12 Feb 2025	0026_MW017_250212	Normal	ES2504684	0.49	4.21	15.6	19.8	28.2	1.42	<0.02	-	0.45	-	1.77	0.4	<0.02	<0.02	0.38	2.37	<0.02	0.52	<0.05	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	25.4	-	-	
MW018	13 Feb 2025	0026_MW018_250213	Normal	ES2504684	<0.01	0.02	<0.01	0.02	0.07	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	0.03	<0																				



Field Parameters						
pH (Field)	Electrical conductivity (field)	Dissolved Oxygen (Field)	DO (%S) (Field)	Redox (Field)	Temperature (Field)	TDS (Field)
pH units	µS/cm	mg/L	%S	mV	°C	mg/L
0.01	0.1	0.01	0.01	0.01	0.1	0.01

EQ1

Location Code	Date	Field ID	Location Comments	Sample Comments	pH (Field)	Electrical conductivity (field)	Dissolved Oxygen (Field)	DO (%S) (Field)	Redox (Field)	Temperature (Field)	TDS (Field)
SW001	11 Feb 2025	0026_SW001_250211	Underneath bridge. 1.0 m wide and 0.5 m deep. Large pool not flowing	Brown, no odour, no sheen, low turbidity.	7.04	519	4.66	57.5	366	27.1	325
SW002	11 Feb 2025	0026_SW002_250211	Culvert underneath Albatross Rd. 0.2 m wide and 0.05 m deep. Slow trickle	Clear, no odour, slight brown colour. Brittle bacterial sheen in near stagnant pool.	6.48	340.6	1.34	15	132.5	21.8	236
SW004B	11 Feb 2025	0026_SW004B_250211	Sample taken from creek bank. 5.0 m wide and 0.2 m deep. Moderate flow.	Pale brown, slight tannin tea colour, no odour, no sheen, low turbidity.	6.76	289.1	4.55	54.5	418.9	24.1	191.5
SW005	11 Feb 2025	0026_SW005_250211	Large pool below bedrock confined racing section and water fall. Approx 50x50m, > 2 m deep. Fast constant flow into pool.	Clear, no odour or sheen. Small amount of foam accumulated in racing section above fall.	7.18	305.7	6.54	75	403.8	23.1	206
SW006	13 Feb 2025	0026_SW006_250212	From pool, downstream of culvert outlet. 2.5 m wide and 0.2 m deep. Moderate flow out of culvert pipe.	Clear, non-turbid, no sheen, foam and bubbles on surface, no odour.	7.38	460.5	5.58	63.6	365.5	21.6	314.5
SW007	12 Feb 2025	0026_SW007_250212	From water in surface drain, upstream of culvert headwall. Inside fence. 3.0 m wide and 0.1 m deep. Non flowing.	Pale brown, turbid, brittle sheen, no odour, algae.	6.82	487.5	3.68	38.9	406.7	22.6	332.5
SW008	12 Feb 2025	0026_SW008_250212	At intersection of 3 creeks/channels. 2 m wide and 0.2 m deep. Slight trickle.	Clear, non-turbid, no sheen, no odour, some sediment at base of creek.	7.46	695	6.26	69.4	283.8	20.5	494
SW009	12 Feb 2025	0026_SW009_250212	Sampled out of dam. 40 m wide, depth unknown. No flow.	Pale brown, turbid, feathers and bird droppings on surface of water, no sheen, slight decaying organics odour.	9.21	530	10.69	137	321.5	26.5	338
SW012	12 Feb 2025	0026_SW012_250211	At intersection of two creeks. 2.0 m wide and 0.2 m deep. Slight trickle.	Clear, non-turbid, no sheen, no odour, some sediment at base of creek.	7.97	591	6.25	72.5	350.8	22.7	403
SW013	13 Feb 2025	0026_SW013_250212	Sampled from creek, base of creek flowing section. 2.0 m wide and 0.15 m deep. Steady trickle.	Clear, non-turbid, no sheen, no odour.	7.23	567	4.25	47.7	436	22.1	383.5
SW014	13 Feb 2025	0026_SW014_250213	On the side of creek, west of Princes Highway bridge. ~ 25 m wide and > 2 m deep. Moderate flow.	Clear, non-turbid, no odour or sheen. Pale brown tinge.	7.10	256.6	5.10	59.5	424.1	23.0	-
SW018	12 Feb 2025	0026_SW018_250212	From pool in surface drain. 1.5 m wide and 0.3 m deep. Non flowing.	Pale brown, turbid, no sheen, no odour.	7.43	420.7	5.14	66.1	392.4	29.3	253.5
SW020	11 Feb 2025	0026_SW020_250211	Sample taken from flowing water upstream of culvert headwall. 0.5 m wide and 0.1 m deep. Slow trickle.	Clear, no odour or sheen, non-turbid.	7.16	177.7	8.22	94.1	540.1	21.3	122.9
SW049	12 Feb 2025	0026_SW049_250212	At the convergence of two gullies/creeks. Down gradient of the base near MW005. 1.5 wide and 0.3 deep. Steady trickle in creek.	Clear, no odour or sheen, slight brown tinge.	6.87	503	2.41	26.2	235.2	19.4	364
SW065	13 Feb 2025	0026_SW065_250213	Inside bed of creek. Near MW026. convergence of two streams. 2m wide and 0.15 m deep. Steady trickle.	Clear, pale brown colour, no odour or sheen.	7.23	543	2.78	31.6	187.8	21.2	383.5
SW106	12 Feb 2025	0026_SW106_250212	Culvert in Explosives Storage Compound. 1.0 m wide and 0.005 m deep. Slight trickle.	Brown, low turbidity, some algae, no sheen, no odour.	6.26	578	5.42	58	445	23.9	454
SW123	11 Feb 2025	0026_SW123_250211	Creek at base of gully, moderate to high slopes leading down to location. Access via locked gate at top of hill. 2.5 m wide and 0.5 m deep. No flow.	Pale brown, low turbidity, wood debris in waterway, no odour or sheen.	6.99	588	2.84	31.4	329.8	21	416
SW124	12 Feb 2025	0026_SW124_250212	From water in surface drain, upstream of culvert headwall under road. Inside fence. 3 m wide and 0.1 m deep. Non flowing.	Pale brown, turbid, brittle sheen, no odour, algae.	7.04	716	3.82	48.2	428.8	27.5	442

Notes

mV      milliVolts  
mg/L    milligrams per Litre  
°C      degrees Celsius  
µS/cm   microSiemens per centimetre



Appendix B  
Table B4  
Surface Water Analytical Results

EQL	PFAS					PFAS - Perfluoroalkyl Sulfonic Acids						PFAS - Perfluoroalkyl Carboxylic Acids										PFAS - Perfluoroalkyl Sulfonamide						PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums					
	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropropane sulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluoroundecanoic acid (PFUnDA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamide acetate acid (EtFOAAA)	N-Ethyl perfluorooctane sulfonamide ethanol (EtFOSE)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamide acetate acid (MeFOAAA)	N-Methyl perfluorooctane sulfonamide ethanol (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)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*		
	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.02	0.05	0.05	0.02	0.05	0.02	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	
NHMRC 2019 Recreational Water PFAS Guidelines	<b>10</b>			<b>2</b>																																	
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value systems	<b>19</b>	0.00023																																			

Location Code	Date	Field ID	Sample Type	Lab Report	PFOA	PFOS	PFHxS	Sum PFHxS & PFOS	PFAS	PFBS	PFDS	PFNS	PFHpS	PFPrS	PFPeS	PFBA	PFDA	PFDDA	PFHpA	PFHxA	PFNA	PFPeA	PFTeDA	PFTriDA	PFUnDA	EtFOSA	EtFOAAA	EtFOSE	MeFOSA	MeFOAAA	MEFOSE	FOSA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	PFAS (Sum of Total)(WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	
SW002	11 Feb 2025	0026_SW002_250211	Normal	ES2504684	<0.01	0.02	<0.01	0.02	0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<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	<0.05	0.02	-	-
SW004B	11 Feb 2025	0026_SW004B_250211	Normal	ES2504684	0.03	0.62	0.59	1.21	1.55	0.06	<0.02	-	0.02	-	0.06	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	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	<0.05	1.44	-	-
SW005	11 Feb 2025	0026_SW005_250211	Normal	ES2504684	0.07	1.90	1.45	3.35	4.28	0.14	<0.02	-	0.06	-	0.13	<0.1	<0.02	<0.02	0.05	0.32	<0.02	0.10	<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	<0.05	4.03	-	-
SW006	12 Feb 2025	0026_SW006_250212	Normal	ES2504684	0.10	2.70	1.69	4.39	5.52	0.18	<0.02	-	0.08	-	0.16	<0.1	<0.02	<0.02	0.05	0.40	<0.02	0.08	<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	5.20	-	-	
SW007	12 Feb 2025	0026_SW007_250212	Normal	ES2504684	0.02	0.62	0.46	1.08	1.46	0.05	<0.02	-	0.02	-	0.04	<0.1	<0.02	<0.02	0.02	0.15	<0.02	0.08	<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	<0.05	1.40	-	-
SW008	12 Feb 2025	0026_SW008_250212	Normal	ES2504684	0.05	1.07	1.15	2.22	2.88	0.09	<0.02	-	0.04	-	0.11	<0.1	<0.02	<0.02	0.03	0.26	<0.02	0.04	<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	<0.05	2.69	-	-
SW009	12 Feb 2025	0026_SW009_250212	Normal	ES2504684	0.11	4.50	2.32	6.82	8.06	0.16	<0.02	-	0.10	-	0.16	<0.1	<0.02	<0.02	0.05	0.46	<0.02	0.10	<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	7.70	-	-	
SW012	11 Feb 2025	0026_SW012_250211	Normal	ES2504684	<0.01	0.02	<0.01	0.02	0.02	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	0.08	0.52	<0.02	0.14	<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	0.02	-	-
SW012	12 Feb 2025	0026_SW012_250212	Normal	ES2504684	0.12	3.76	2.77	6.53	8.22	0.30	<0.02	-	0.12	-	0.26	<0.1	<0.02	<0.02	0.08	0.52	<0.02	0.14	<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	7.69	-	-	
SW013	13 Feb 2025	0026_SW013_250213	Normal	ES2504684	0.06	2.26	1.51	3.77	4.62	0.13	<0.02	-	0.07	-	0.13	<0.1	<0.02	<0.02	0.04	0.30	<0.02	0.06	<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	4.36	-	-	
SW014	13 Feb 2025	0026_SW014_250213	Normal	ES2504684	<0.01	0.33	0.29	0.62	0.72	0.03	<0.02	-	<0.02	-	0.03	<0.1	<0.02	<0.02	<0.02	0.04	<0.02	<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	0.69	-	-	
SW018	12 Feb 2025	0026_SW018_250212	Normal	ES2504684	0.50	7.90	6.28	14.2	19.3	0.75	<0.02	-	0.40	-	0.66	0.2	<0.02	<0.02	0.24	1.70	<0.02	0.29	<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	17.9	-	-	
SW020	11 Feb 2025	0026_SW020_250211	Normal	ES2504684	0.03	0.97	1.02	1.99	2.43	0.09	<0.02	-	0.03	-	0.08	<0.1	<0.02	<0.02	<0.02	0.16	<0.02	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	2.29	-	-	
SW049	12 Feb 2025	0026_SW049_250212	Normal	ES2504684	0.02	0.81	0.46	1.27	1.58	0.06	<0.02	-	<0.02	-	0.04	<0.1	<0.02	<0.02	<0.02	0.12	<0.02	0.05	<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	<0.05	1.52	-	-
SW065	13 Feb 2025	0026_SW065_250213	Normal	ES2504684	0.10	2.42	2.66	5.08	6.81	0.25	<0.02	-	0.10	-	0.22	0.1	<0.02	<0.02	0.08	0.58	<0.02	0.18	<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	6.37	-	-	
SW106	12 Feb 2025	0026_SW106_250212	Normal	ES2504684	0.24	5.13	4.40	9.53	13.0	0.44	<0.02	-	0.19	-	0.38	0.2	<0.02	<0.02	0.17	1.16	<0.02	0.44	<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	12.2	-	-	
	11 Feb 2025	0026_QC100_250211	Intra-lab Duplicate	ES2504684	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<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	<0.05	<0.01	-	-
	11 Feb 2025	0026_QC200_25011	Inter-lab Duplicate	1190103	<0.01	<0.01	<0.01	<0.01	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01		
SW123	11 Feb 2025	0026_SW123_250211	Normal	ES2504684	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	-	<0.02	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<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	-	-	
SW124	12 Feb 2025	0026_SW124_250212	Normal	ES2504684	0.09	2.40	2.20	4.60	6.13	0.29	<0.02	-	0.08	-	0.28	<0.1	<0.02	<0.02	0.05	0.52	<0.02	0.07	<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	5.62	-	-		









Appendix B  
Table B5  
Historic Groundwater Analytical Results

		PFAS					PFAS - Perfluoroalkyl Sulfonic Acids					PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - Perfluoroalkyl Sulfonamide					PFAS - Fluorotelomer				PFAS - Sums		PFAS													
		Perfluorooctanoic acid (PFOA) μg/L	Perfluorooctane sulfonic acid (PFOS) μg/L	Perfluorohexane sulfonic acid (PFHxS) μg/L	Sum of PFHxSand PFOS μg/L	PFAS (Sum of Total) μg/L	Perfluorobutane sulfonic acid (PFBS) μg/L	Perfluorodecane sulfonic acid (PFDS) μg/L	Perfluorohexane sulfonic acid (PFHpS) μg/L	Perfluoropropane sulfonic acid (PFPrS) μg/L	Perfluoropentane sulfonic acid (PFPeS) μg/L	Perfluorononane sulfonic acid (PFNS) μg/L	Perfluorobutanoic acid (PFBA) μg/L	Perfluorodecanoic acid (PFDA) μg/L	Perfluorododecanoic acid (PFDDa) μg/L	Perfluorooheptanoic acid (PFHpA) μg/L	Perfluorohexanoic acid (PFHxA) μg/L	Perfluorononanoic acid (PFNA) μg/L	Perfluoropentanoic acid (PFPeA) μg/L	Perfluorotetraecanoic acid (PFTeDA) μg/L	Perfluorotridecanoic acid (PFTrDA) μg/L	Perfluoroundecanoic acid (PFUnDA) μg/L	Perfluorohexadecanoic acid (PFHxDA) μg/L	perfluorooctane sulfonamide (PFOSA) μg/L	perfluorooctane sulfonamide (PFOSA) μg/L	perfluorooctane sulfonamide (PFOSA) μg/L	perfluorooctane sulfonamide (PFOSA) 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)(WA DER List) μg/L	Sum of US EPA PFAS (PFOS + PFOA) μg/L	Sum of treatment PFAS (PFHxS + PFOS + PFOA) μg/L	phosphate diester (β-2 PIPAP) μg/L	Perfluorooctadecanoic acid (PFODA) μg/L				
EQL		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	
NHMRC 2019 Recreational Water PFAS Guidelines		10			2																																				
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value		19	0.00023																																						

Location Code	Date	Field ID	Sample Type	< 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	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-	-	-				
MW018	19 Jun 2017	0026_MW18_170619	Normal	< 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	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-	-	-			
	19 Jun 2017	0026_QC157_170619	Intra-lab Duplicate	< 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	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	-	-	-	-			
	20 Jun 2017	0026_QC238_170620	Inter-lab Duplicate	< 0.01	<0.01	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
	26 Feb 2020	0026_MW18_200226	Normal	< 0.01	<0.01	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	24 Aug 2020	0026_MW018_200824	Normal	< 0.01	<0.01	< 0.02	< 0.01	<b>0.72</b>	<b>0.72</b>	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	09 Feb 2021	0026_MW018_210209	Normal	< 0.01	<b>0.01</b>	< 0.02	<b>0.01</b>	<b>0.09</b>	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	09 Feb 2022	0026_MW018_220209	Normal	< 0.01	<0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
	14 Feb 2023	0026_MW018_230214	Normal	< 0.01	<0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
	15 Feb 2024	0026_MW018_240215	Normal	< 0.01	<0.01	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
	MW024	15 Nov 2016	0026_MW24_161115	Normal	< 0.01	<0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
		15 Nov 2016	0026_QC149_161115	Intra-lab Duplicate	< 0.01	<0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
		15 Nov 2016	0026_QC150_161115	Intra-lab Duplicate	< 0.01	<0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
		14 Dec 2016	0026_MW24_161213	Normal	< 0.01	<0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
		25 May 2017	0026_MW24_170525	Normal	0.03 <sup>#1</sup>	0.62 <sup>#1</sup>	1.0 <sup>#1</sup>	1.62	-	0.07	< 0.01	0.03 <sup>#1</sup>	-	0.07 <sup>#1</sup>	-	< 0.05	< 0.01	< 0.01	0.02 <sup>#1</sup>	0.13 <sup>#1</sup>	< 0.01	0.03 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
		21 Jun 2017	0026_MW24_170621	Normal	0.01	0.26 <sup>#1</sup>	0.41 <sup>#1</sup>	0.67	-	0.03	< 0.01	0.03 <sup>#1</sup>	-	0.03 <sup>#1</sup>	-	< 0.05	< 0.01	< 0.01	0.06 <sup>#1</sup>	< 0.01	0.02 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
28 Feb 2020		0026_MW24_200228	Normal	< 0.01	0.22	0.13	0.35	0.38	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	0.03	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	
25 Aug 2020		0026_MW024_200825	Normal	0.02	0.26	0.31	0.57	0.84	0.04	< 0.02	< 0.02	-	0.03	-	< 0.1	< 0.02	< 0.02	0.02	0.12	< 0.02	0.04	< 0.05	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05		
09 Feb 2021		0026_MW024_210209	Normal	0.02	0.17	0.28	0.45	0.74	0.05	< 0.02	< 0.02	-	0.03	-	< 0.1	< 0.02	< 0.02	0.03	0.12	< 0.02	0.04	< 0.05	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05		
09 Feb 2022		0026_MW024_220209	Normal	< 0.01	0.02	0.03	0.05	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.																							



EQL	PFAS					PFAS - Perfluoroalkyl Sulfonic Acids					PFAS - Perfluoroalkyl Carboxylic Acids								PFAS - Perfluoroalkyl Sulfonylamide					PFAS - Fluorotelomer			PFAS - Sums		PFAS							
	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorooctane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDDa)	Perfluorooctanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorohexadecanoic acid (PFHxDA)	Perfluorooctane sulfonamide (FOSA)	Perfluorodecanesulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSAA)	Perfluorodecyl sulfonamide (PFOSDA)	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) (WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of untested PFAS (PFHxS + PFOS + PFOA)*	phosphate diester (β-2 DPAP)	Perfluorodecanoic acid (PFODA)	
10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value	19	0.00023																																		

Location Code	Date	Field ID	Sample Type	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorooctane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDDa)	Perfluorooctanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorohexadecanoic acid (PFHxDA)	Perfluorooctane sulfonamide (FOSA)	Perfluorodecanesulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSAA)	Perfluorodecyl sulfonamide (PFOSDA)	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) (WA DER List)	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of untested PFAS (PFHxS + PFOS + PFOA)*	phosphate diester (β-2 DPAP)	Perfluorodecanoic acid (PFODA)												
.....	08 Feb 2021	0026_MW038_210208	Normal	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 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	< 0.20	-	-	-	-					
	07 Feb 2022	0026_MW038_220207	Normal	< 0.01	< 0.01	0.06	0.06	0.20	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.10	< 0.02	0.04	< 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	< 0.05	< 0.05	< 0.05	< 0.20	-	-	-	-						
	14 Feb 2023	0026_MW038_230214	Normal	< 0.01	0.01	0.02	0.03	0.07	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	0.04	< 0.02	< 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	< 0.05	< 0.05	< 0.05	< 0.07	-	-	-	-						
	14 Feb 2024	0026_MW038_240214	Normal	< 0.01	< 0.01	0.02	0.13	0.21	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	0.06	< 0.02	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.21	-	-	-	-				
MW039	23 May 2017	0026_MW39_170523	Normal	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-				
	21 Jun 2017	0026_MW39_170621	Normal	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-			
	28 Feb 2020	0026_MW39_200228	Normal	< 0.01	0.01	< 0.02	0.01	0.01	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.01	-	-	-	-	
	25 Aug 2020	0026_MW039_200825	Normal	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	-	-	-	-
	09 Feb 2021	0026_MW039_210209	Normal	< 0.01	0.02	< 0.02	0.02	0.02	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	0.02	-	-	-	-		
	10 Feb 2022	0026_MW039_220210	Normal	< 0.01	0.04	0.01	0.05	0.05	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	0.05	-	-	-	-		
	15 Feb 2023	0026_MW039_230215	Normal	< 0.01	0.01	< 0.01	0.01	0.01	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	0.01	-	-	-	-		
	16 Feb 2024	0026_MW039_240216	Normal	< 0.01	0.01	< 0.01	0.01	0.01	< 0.02	< 0.02	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	0.01	-	-	-	-			
MW044	22 May 2017	0026_MW44_170522	Normal	0.24	0.06 <sup>#1</sup>	5.1 <sup>#1</sup>	5.16	-	3.4 <sup>#1</sup>	< 0.01	0.05 <sup>#1</sup>	-	1.4 <sup>#1</sup>	-	0.70	< 0.01	< 0.01	0.42	4.1 <sup>#1</sup>	< 0.01	1.2 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	
	20 Jun 2017	0026_MW44_170620	Normal	0.39	0.17	11	11.17	-	5.1	< 0.01	0.08	-	3.0	-	0.92	< 0.01	< 0.01	0.65	6.9	< 0.01	1.3	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	-	-	
	26 Feb 2020	0026_MW44_200226	Normal	0.50	0.69	15.8	16.5	33.4	4.00	< 0.02	0.24	-	3.94	-	0.7	< 0.02	< 0.02	0.59	5.81	< 0.02	1.08	< 0.05	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	29.2	-	-	-	-	
	24 Aug 2020	0026_MW044_200824	Normal	0.38	0.47	12.7	13.2	27.0	3.24	< 0.02	0.20	-	3.33	-	0.5	< 0.02	< 0.02	0.50	4.86	< 0.02	0.85	< 0.05	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	23.5	-	-	-	-	
	24 Aug 2020	0026_QC100_200824	Intra-lab Duplicate	0.45	0.58	16.4	17.0	33.6	3.96	< 0.02	0.24	-	3.92	-	0.6	< 0.02	< 0.02	0.58	5.80	< 0.02	1.02	< 0.05	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	29.4	-	-	-	-	
	09 Feb 2021	0026_MW044_210209	Normal	0.46	0.55	10.1	10.6	22.4	2.52	< 0.02	0.24	-	3.38	-	0.4	< 0.02	< 0.02	0.53	3.55	< 0.02	0.71	< 0.05	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	<															

Table with 23 columns representing various PFAS categories and 2 rows for EQL and NHMRC 2019 Recreational Water PFAS Guidelines. Values are in µg/L.

Location

Main data table with columns: Code, Date, Field ID, Sample Type, and 23 PFAS categories. Rows are grouped by location (SW001, SW002) and include sample dates from 2016 to 2024.



Appendix B  
Table B6  
Historical Surface Water Analytical Results

EQL	PFAS				PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids								PFAS - Perfluoroalkyl Sulfonamide					PFAS - Fluorotelomer			PFAS - Sums		PFAS											
	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPS)	Perfluorononanesulfonic acid (PFNS)	Perfluorobutanoic acid (PFBA)	Perfluorododecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorooctanoic hexadecanoic acid (PFHxDA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	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) (WA DER List)	Sum of USEPA PFAS (PFOS + PFOA) (Sum of PFAS)	Sum of PFAS (PFHxS + PFOS + PFOA) (Sum of PFAS)	8:2 Polyfluoroalkyl phosphate diester (8:2 diPPA)	Perfluorooctadecanoic acid (PFODA)			
EQI	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.05	0.02	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.05		
NHMR 2019 Recreational Water PFAS Guidelines	10				2																																				
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value	19	0.00023																																							

Location Code	Date	Field ID	Sample Type	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPS)	Perfluorononanesulfonic acid (PFNS)	Perfluorobutanoic acid (PFBA)	Perfluorododecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorooctanoic hexadecanoic acid (PFHxDA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	Perfluorooctane sulfonamide (ELOSA)	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) (WA DER List)	Sum of USEPA PFAS (PFOS + PFOA) (Sum of PFAS)	Sum of PFAS (PFHxS + PFOS + PFOA) (Sum of PFAS)	8:2 Polyfluoroalkyl phosphate diester (8:2 diPPA)	Perfluorooctadecanoic acid (PFODA)			
SW007	15 Aug 2022	0026_SW006_220815	Normal	0.43	12.2	4.73	16.9	21.2	0.61	0.03	-	0.32	-	0.83	-	0.2	< 0.02	< 0.02	0.22	1.33	0.02	0.24	< 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	< 0.05	< 0.05	20.0	-	-	-	-
	14 Feb 2023	0026_SW006_230214	Normal	0.08	2.14	1.47	3.61	4.56	0.16	< 0.02	-	0.09	-	0.18	-	< 0.1	< 0.02	< 0.02	0.04	0.32	< 0.02	0.08	< 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	< 0.05	< 0.05	4.29	-	-	-	-
	16 Aug 2023	0026_SW006_230816	Normal	0.09	2.06	1.90	3.96	5.03	0.18	< 0.02	-	0.08	-	0.19	-	< 0.1	< 0.02	< 0.02	0.06	0.37	< 0.02	0.10	< 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	< 0.05	4.76	-	-	-	-	
	13 Feb 2024	0026_SW006_240213	Normal	0.08	2.53	1.31	3.84	4.80	0.17	< 0.02	-	0.07	-	0.18	-	< 0.1	< 0.02	< 0.02	0.05	0.32	< 0.02	0.09	< 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	< 0.05	< 0.05	4.55	-	-	-	-
	22 Aug 2024	0026_SW006_240822	Normal	0.26	5.46	2.96	8.42	11.6	0.43	0.02	-	0.15	-	0.48	-	0.1	< 0.02	< 0.02	0.18	1.12	< 0.02	0.24	< 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	< 0.05	< 0.05	10.8	-	-	-	-
	14 Dec 2016	0026_SW07_161214	Normal	0.12#1	3.6#1	1.1#1	4.7	-	0.13	< 0.01	-	-	-	-	-	-	0.30	< 0.01	< 0.01	0.42	1.8	0.02	1.4	< 0.01	< 0.01	< 0.01	-	-	< 0.05	-	-	< 0.05	< 0.01	2.3	< 0.01	-	-	-	-	-	-	-		
	16 Dec 2016	0026_SW07_161216	Normal	0.02#1	0.59#1	0.43#1	1.02	-	0.03	< 0.01	-	-	-	-	-	-	< 0.05	< 0.01	< 0.01	0.02	0.09#1	0.03	< 0.01	< 0.01	< 0.01	-	-	< 0.05	-	-	< 0.05	< 0.01	0.12	< 0.01	-	-	-	-	-	-	-	-		
	08 Feb 2017	0026_SW07_170208	Normal	0.06#1	2.7#1	0.67#1	3.37	-	0.08	< 0.01	-	-	-	-	-	-	< 0.05	< 0.01	< 0.01	0.02#1	0.26#1	< 0.01	0.05#1	< 0.01	< 0.01	< 0.01	-	-	< 0.05	-	-	< 0.05	< 0.01	0.14	< 0.01	-	-	-	-	-	-	-		
	11 Feb 2020	0026_SW07_200211	Normal	0.02	0.36	0.36	0.72	0.99	0.07	< 0.02	-	< 0.02	-	0.05	-	< 0.1	< 0.02	< 0.02	< 0.02	0.09	< 0.02	0.04	< 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	< 0.05	0.94	-	-	-	-	
	26 Feb 2020	0026_SW07_200226	Normal	0.04	1.11	0.62	1.73	2.54	0.11	< 0.02	-	0.02	-	0.08	-	< 0.1	< 0.02	< 0.02	0.06	0.26	< 0.02	0.17	< 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	2.44	-	-	-	-		
	20 May 2020	0026_SW007_200520	Normal	0.04	1.50	1.97	3.47	4.29	0.18	< 0.02	-	0.08	-	0.24	-	< 0.1	< 0.02	< 0.02	0.02	0.22	< 0.02	0.04	< 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	< 0.05	< 0.05	3.97	-	-	-	-
	14 Jul 2020	0026_SW007_200714	Normal	0.01	0.39	0.37	0.76	0.88	0.03	< 0.02	-	< 0.02	-	0.03	-	< 0.1	< 0.02	< 0.02	< 0.02	0.05	< 0.02	< 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	< 0.05	< 0.05	0.85	-	-	-	-
	26 Aug 2020	0026_SW007_200826	Normal	0.03	0.94	1.34	2.28	2.87	0.14	< 0.02	-	0.05	-	0.16	-	< 0.1	< 0.02	< 0.02	< 0.02	0.19	< 0.02	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	< 0.05	< 0.05	2.66	-	-	-	-
	02 Nov 2020	0026_QC100_201102	Intra-lab Duplicate	0.02	0.62	0.80	1.42	1.70	0.07	< 0.02	-	0.02	-	0.08	-	< 0.1	< 0.02	< 0.02	< 0.02	0.09	< 0.02	< 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	< 0.05	< 0.05	1.60	-	-	-	-
	02 Nov 2020	0026_SW007_201102	Normal	0.02	0.73	0.84	1.57	1.90	0.08	< 0.02	-	0.03	-	0.08	-	< 0.1	< 0.02	< 0.02	< 0.02	0.10	< 0.02	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	< 0.05	< 0.05	1.79	-	-	-	-
	11 Feb 2021	0026_SW007_210211	Normal	0.01	0.47	0.18	0.65	0.90	0.03	< 0.02	-	< 0.02	-	0.02	-	< 0.1	< 0.02	< 0.02	0.03	0.10	< 0.02	0.06	< 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	< 0.05	0.88	-	-	-	-	
11 Aug 2021	0026_SW007_210811	Normal	0.02	0.25	0.93	1.18	1.74	0.13	< 0.02	-	0.02	-	0.13	-	< 0.1	< 0.02	< 0.02	0.03	0.18	< 0.02	0.05	< 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	< 0.05	< 0.05	1.59	-	-	-	-	
07 Feb 2022	0026_SW007_220207	Normal	0.01	0.28	0.24	0.52	0.84	0.04	< 0.02	-	< 0.02	-	0.03	-	< 0.1	< 0.02	< 0.02	0.02	0.12	< 0.02	0.10	< 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	< 0.05	< 0.05	0.81	-	-	-	-	
15 Aug 2022	0026_QC101_220815	Intra-lab Duplicate	0.05	0.97	0.63	1.60	2.24	0.13	< 0.02	-	0.03	-	0.12	-	< 0.1	< 0.02	< 0.02	0.04	0.19	< 0.02	0.08	< 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	< 0.05	< 0.05	2.09	-	-	-	-	
15 Aug 2022	0026_SW007_220815	Normal	0.05	1.20	0.70	1.90	2.53	0.12	< 0.02	-	0.04	-	0.12	-	< 0.1	< 0.02	< 0.02	0.04	0.19	< 0.02	0.07	< 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	< 0.05	< 0.05	2.37	-	-	-	-	
13 Feb 2023	0026_SW007_230213	Normal	0.02	0.74																																								





Appendix B  
Table B6  
Historical Surface Water Analytical Results

PFASIMB  
HMAS Albatross (0026)  
12626622

EQL	PFAS				PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids										PFAS - Perfluoroalkyl Sulfonamide					PFAS - Fluorotelomer			PFAS - Sums			PFAS									
	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHS)	Sum of PFHS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorododecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDDA)	Perfluoroheptanoic acid (PFHpA)	Perfluoroheptanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTriDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroundecanoic acid (PFUnDA)	hexadecanoic acid (PFHxDA)	perfluorooctane sulfonamide (ELOSA)	perfluorooctane sulfonamide (ELOSA)	perfluorooctane sulfonamide (ELOSA)	perfluorooctane sulfonamide (ELOSA)	perfluorooctane sulfonamide (ELOSA)	perfluorooctane sulfonamide (ELOSA)	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)(WA DER List)	Sum of USEPA PFAS (PFOS + PFOA)	Sum of remaining PFAS (PFHS + PFOS + PFOA)	8:2 Polynorbornane phosphoric 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	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L				
NHMR 2019 Recreational Water PFAS Guidelines	10			2																																							
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value	19	0.00023																																									
Location																																											
Code	Date	Field ID	Sample Type																																								
	14 Jul 2020	0026_SW013_200714	Normal	0.07	1.18	2.23	3.41	4.71	0.23	< 0.02	-	0.06	-	0.26	-	< 0.1	< 0.02	< 0.02	0.07	0.51	< 0.02	0.10	< 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	< 0.05	< 0.05	< 0.05	< 0.05		
	26 Aug 2020	0026_QC103_200826	Intra-lab Duplicate	0.03	0.62	0.82	1.44	1.92	0.10	< 0.02	-	0.03	-	0.11	-	< 0.1	< 0.02	< 0.02	< 0.02	0.18	< 0.02	0.03	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	26 Aug 2020	0026_SW013_200826	Normal	0.03	0.78	0.76	1.54	1.99	0.10	< 0.02	-	0.03	-	0.10	-	< 0.1	< 0.02	< 0.02	< 0.02	0.16	< 0.02	0.03	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	02 Nov 2020	0026_QC200_201102	Inter-lab Duplicate	0.021	0.53	0.61	1.14	-	0.071	< 0.01	-	0.015	-	0.061	< 0.01	< 0.05	< 0.01	< 0.01	0.015	0.1	< 0.01	0.027	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02	< 0.01	< 0.05	< 0.02	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	02 Nov 2020	0026_SW013_201102	Normal	0.03	0.84	0.77	1.61	2.02	0.09	< 0.02	-	0.03	-	0.08	-	< 0.1	< 0.02	< 0.02	< 0.02	0.15	< 0.02	0.03	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	08 Feb 2021	0026_SW013_210208	Normal	0.08	2.25	1.30	3.55	4.61	0.25	< 0.02	-	0.06	-	0.18	-	< 0.1	< 0.02	< 0.02	< 0.02	0.07	0.35	< 0.02	0.07	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	11 Aug 2021	0026_SW013_210811	Normal	0.08	1.22	2.44	3.66	5.02	0.30	< 0.02	-	0.07	-	0.31	-	< 0.1	< 0.02	< 0.02	< 0.02	0.07	0.44	< 0.02	0.09	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	08 Feb 2022	0026_QC102_220208	Intra-lab Duplicate	0.06	1.15	1.44	2.59	3.45	0.17	< 0.02	-	0.05	-	0.17	-	< 0.1	< 0.02	< 0.02	< 0.02	0.04	0.31	< 0.02	0.06	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	08 Feb 2022	0026_SW013_220208	Normal	0.07	1.64	1.54	3.18	4.10	0.18	< 0.02	-	0.06	-	0.18	-	< 0.1	< 0.02	< 0.02	< 0.02	0.04	0.32	< 0.02	0.07	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	15 Aug 2022	0026_SW013_220815	Normal	0.06	1.03	1.16	2.19	3.05	0.19	< 0.02	-	0.04	-	0.21	-	< 0.1	< 0.02	< 0.02	< 0.02	0.04	0.27	< 0.02	0.05	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	15 Feb 2023	0026_SW013_230215	Normal	0.05	1.59	1.49	3.08	3.90	0.16	< 0.02	-	0.08	-	0.17	-	< 0.1	< 0.02	< 0.02	< 0.02	0.04	0.26	< 0.02	0.06	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	16 Aug 2023	0026_SW013_230816	Normal	0.08	1.03	1.75	2.78	3.98	0.24	< 0.02	-	0.05	-	0.19	-	< 0.1	< 0.02	< 0.02	< 0.02	0.08	0.43	< 0.02	0.13	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	13 Feb 2024	0026_SW013_240213	Normal	0.06	1.61	1.50	3.11	4.01	0.19	< 0.02	-	0.06	-	0.18	-	< 0.1	< 0.02	< 0.02	< 0.02	0.04	0.28	< 0.02	0.09	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	26 Aug 2024	0026_SW013_240822	Normal	0.05	1.14	0.94	2.08	2.78	0.12	< 0.02	-	0.04	-	0.13	-	< 0.1	< 0.02	< 0.02	< 0.02	0.03	0.22	< 0.02	0.06	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	14 Nov 2016	0026_SW14_161114	Normal	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	-	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-			
	13 Dec 2016	0026_SW14_161213	Normal	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	-	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-			
	16 Dec 2016	0026_SW14_161216	Normal	0.08 <sup>#1</sup>	3.1 <sup>#1</sup>	1.8 <sup>#1</sup>	4.9	-	0.22	< 0.01	-	-	-	0.06	< 0.01	< 0.01	0.04 <sup>#1</sup>	0.41 <sup>#1</sup>	< 0.01	0.05 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-			
	08 Feb 2017	0026_SW14_170208	Normal	0.02 <sup>#1</sup>	0.57 <sup>#1</sup>	0.21 <sup>#1</sup>	0.78	-	0.02	< 0.01	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	0.06 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-			
	28 Mar 2017	0026_SW14_170328	Normal	0.01 <sup>#1</sup>	0.25 <sup>#1</sup>	0.21 <sup>#1</sup>	0.46	-	0.02	< 0.01	-	< 0.01	-	0.02 <sup>#1</sup>	-	< 0.05	< 0.01	< 0.01	< 0.01	0.04 <sup>#1</sup>	< 0.01	0.01 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	10 Dec 2019	0026_SW14_191211	Normal	0.04	0.78	2.02	2.80	3.88	0.24	< 0.02	-	0.05	-	0.21	-	< 0.1	< 0.02	< 0.02	< 0.02	0.04	0.43	< 0.02	0.07	< 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	< 0.05	< 0.05	< 0.05	< 0.05	
	11 Feb 2020	0026_SW14_200211	Normal	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.02	< 0.02	-	< 0.02	-	< 0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05	< 0.05	< 0.02	< 0.05	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	26 Feb 2020	0026_SW14_200226	Normal	< 0.01	< 0.01	< 0.02	< 0.01																																				

EQL	PFAS					PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer				PFAS - Sums		PFAS					
	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorobutanoic acid (PFBA)	Perfluorododecanoic acid (PFDDA)	Perfluorododecanoic acid (PFDDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorooctanoic acid (PFHxA)	Perfluorooctane sulfonamide (EFOSA)	Perfluorooctane sulfonamide (FOA)	Perfluorooctane sulfonamide (FOSA)	Perfluorooctane sulfonamide (FOSA)	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)(WA DER List)	Sum of USEPA PFAS (PFOS + PFOA)†	Sum of remaining PFAS (PFHxS + PFOS + PFOA)†	8:2 Polynuclear phosphoric diester (8:2 diPAE)	Perfluorododecanoic acid (PFDDA)				
NHMRC 2019 Recreational Water PFAS Guidelines	10			2																																					
PFAS NEMP 2.0 2020 Freshwater - 99% - high conservation value	19	0.00023																																							

Location Code	Date	Field ID	Sample Type	Perfluorooctanoic acid (PFOA)	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	PFAS (Sum of Total)	Perfluorobutane sulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorononane sulfonate (PFNS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorononanesulfonic acid (PFNS)	Perfluorobutanoic acid (PFBA)	Perfluorododecanoic acid (PFDDA)	Perfluorododecanoic acid (PFDDA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorooctanoic acid (PFHxA)	Perfluorooctane sulfonamide (EFOSA)	Perfluorooctane sulfonamide (FOA)	Perfluorooctane sulfonamide (FOSA)	Perfluorooctane sulfonamide (FOSA)	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)(WA DER List)	Sum of USEPA PFAS (PFOS + PFOA)†	Sum of remaining PFAS (PFHxS + PFOS + PFOA)†	8:2 Polynuclear phosphoric diester (8:2 diPAE)	Perfluorododecanoic acid (PFDDA)																			
SW020	15 Aug 2022	0026_QC100_220815	Intra-lab Duplicate	0.16	3.09	3.48	6.57	7.99	0.25	< 0.02	-	0.14	-	0.39	-	< 0.1	< 0.02	< 0.02	0.07	0.35	< 0.02	0.06	< 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	< 0.05	< 0.05	< 0.05	< 0.05	7.46	-	-	-	-													
	15 Aug 2022	0026_SW018_220815	Normal	0.16	3.18	3.23	6.41	7.84	0.26	< 0.02	-	0.15	-	0.37	-	< 0.1	< 0.02	< 0.02	0.08	0.35	< 0.02	0.06	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	7.32	-	-	-	-										
	13 Feb 2023	0026_SW018_230213	Normal	0.28	4.60	4.34	8.94	12.2	0.60	< 0.02	-	0.24	-	0.59	-	0.1	< 0.02	< 0.02	0.16	1.08	< 0.02	0.22	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	11.4	-	-	-	-									
	16 Aug 2023	0026_SW018_230816	Normal	0.52	3.97	8.35	12.3	18.4	1.03	< 0.02	-	0.32	-	0.98	-	0.4	< 0.02	< 0.02	0.35	1.94	< 0.02	0.49	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	17.0	-	-	-	-							
	14 Feb 2024	0026_SW018_240214	Normal	0.11	3.27	1.90	5.17	6.32	0.21	< 0.02	-	0.11	-	0.21	-	< 0.1	< 0.02	< 0.02	0.07	0.35	< 0.02	0.09	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	6.00	-	-	-	-									
	22 Aug 2024	0026_SW018_240822	Normal	0.10	1.97	1.78	3.75	4.95	0.18	0.02	-	0.07	-	0.24	-	< 0.1	< 0.02	< 0.02	0.06	0.37	< 0.02	0.09	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.55	-	-	-	-							
	12 Dec 2016	0026_QC166_161212	Intra-lab Duplicate	0.04 <sup>#1</sup>	1.6 <sup>#1</sup>	1.9 <sup>#1</sup>	3.5	-	0.15	< 0.01	-	-	-	-	-	< 0.05	< 0.01	< 0.01	0.02 <sup>#1</sup>	0.23 <sup>#1</sup>	< 0.01	0.03 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-	-										
	12 Dec 2016	0026_QC166_161212	Intra-lab Duplicate	0.05 <sup>#1</sup>	1.5 <sup>#1</sup>	2.0 <sup>#1</sup>	3.5	-	0.18	< 0.01	-	-	-	-	-	< 0.05	< 0.01	< 0.01	0.02 <sup>#1</sup>	0.23 <sup>#1</sup>	< 0.01	0.03 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-	-										
	12 Dec 2016	0026_SW20_161212	Normal	< 0.01	0.48 <sup>#1</sup>	0.20 <sup>#1</sup>	0.68	-	0.02	< 0.01	-	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	0.04 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-											
	16 Dec 2016	0026_SW20_161216	Normal	0.05 <sup>#1</sup>	1.0 <sup>#1</sup>	2.1	3.1	-	0.16	< 0.01	-	-	-	-	-	< 0.05	< 0.01	< 0.01	0.02 <sup>#1</sup>	0.19 <sup>#1</sup>	< 0.01	0.03 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-	-	-	-	-	-	-	-	-											
	09 Feb 2017	0026_SW20_170209	Normal	0.03 <sup>#1</sup>	1.2 <sup>#1</sup>	0.39 <sup>#1</sup>	1.59	-	0.03	< 0.01	-	-	-	-	-	< 0.05	< 0.01	< 0.01	< 0.01	0.12 <sup>#1</sup>	< 0.01	0.02 <sup>#1</sup>	< 0.01	< 0.01	< 0.01	-	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.01	< 0.05	< 0.01	-	-	-	-	-	-	-	-	-	-	-											
	11 Feb 2020	0026_SW20_200211	Normal	0.01	0.35	0.39	0.74	0.88	0.04	< 0.02	-	< 0.02	-	0.04	-	< 0.1	< 0.02	< 0.02	< 0.02	0.05	< 0.02	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.84	-	-	-	-							
	26 Feb 2020	0026_SW20_200226	Normal	0.03	0.89	1.16	2.05	2.49	0.12	< 0.02	-	0.03	-	0.11	-	< 0.1	< 0.02	< 0.02	< 0.02	0.13	< 0.02	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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.35	-	-	-	-							
	20 May 2020	0026_QC200_200520	Inter-lab Duplicate	0.064	0.82	1.1	1.92	-	0.071	< 0.01	-	0.024	-	0.075	< 0.01	< 0.05	< 0.01	< 0.01	0.011	0.10	< 0.01	< 0.02	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02	< 0.02	< 0.01	< 0.05	< 0.02	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
	20 May 2020	0026_SW020_200520	Normal	0.11	1.47	1.40	2.87	3.50	0.11	< 0.02	-	0.06	-	0.14	-	< 0.1	< 0.02	< 0.02	0.02	0.16	< 0.02	0.03	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.30	-	-	-	-			
	14 Jul 2020	0026_SW020_200714	Normal	0.01	0.48	0.31	0.79	0.87	< 0.02	< 0.02	-	< 0.02	-	0.02	-	< 0.1	< 0.02	< 0.02	< 0.02	0.05	< 0.02	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.85	-	-	-	-	
	26 Aug 2020	0026_SW020_200826	Normal	0.03	0.78	1.24	2.02	2.48	0.11	< 0.02	-	0.04	-	0.14	-	< 0.1	< 0.02	< 0.02	< 0.02	0.14	< 0.02	< 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	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.30	-	-	-	-
	02 Nov 2020	0026_SW020_201102	Normal	0.02	0.75	0.71	1.46	1.72	0.07	< 0.02	-	0.02	-	0.06	-	< 0.1	< 0.02	< 0.02	< 0.02	0.09	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	-	< 0.05	< 0.02	< 0.05																														

# Appendix C

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 AS4482.1 which includes appropriate indicators of data quality (data quality indicators [DQIs] used to assess QA/QC, and GHD’s Standard Field Operating Procedures).

To assess the usability of the data prior to making decisions, the data is assessed against pre-determined DQIs. The DQIs including precision, accuracy, representativeness, comparability and completeness, will be 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 C1.

- 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.
- The relative percentage differences (RPDs) are to be calculated for all primary and field duplicate pairs and will be considered acceptable based on the following RPD limits:
  - 200% for concentrations within 1 to 10 times the analyte LOR.
  - 50% for concentrations within 10 to 30 times the analyte LOR.
- Accuracy - measures the bias in a measurement system. The accuracy of the laboratory data that is 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. The nominal “acceptance limits” on laboratory control samples are defined in Table 1.
- 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 C1 Summary of quality assurance / quality control criteria (as applicable)- all media

Data quality indicator	Frequency	Data quality acceptance criteria
<b>Precision</b>		
Blind and split duplicates	1 / 10 samples (combined)	<30-200% RPD
Transport blank	1 per batch	<LOR
Transport spike	-	-
<b>Accuracy</b>		
Surrogate spikes (laboratory)	All organic samples 1 per lab batch	70-130%
Laboratory control samples	1 per lab batch	<LOR
Matrix spikes		70-130
Rinsate blanks	1/equipment/day	<LOR
<b>Representativeness</b>		
Sampling appropriate for media and analytes Samples extracted and analysed within holding times	All samples All samples	-
LORs appropriate and consistent <sup>1</sup>	All samples	All samples
<b>Comparability</b>		
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
<b>Completeness</b>		

Data quality indicator	Frequency	Data quality acceptance criteria
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	-
Data from critical samples is considered valid	-	Critical samples valid

Acronyms  
COC: Chain of Custody  
LOR: Limit of Reporting  
QA/QC: Quality assurance / quality control

Table notes: <sup>1</sup> = 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 are not met, further investigation will be necessary to determine whether the non-conformance will significantly affect the usefulness of the data.

### C-1-1 Field quality assurance and quality control

The quality assurance/quality control (QA/QC) procedures are based on NEPM Schedule B2 (2013).

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.

All fieldwork was conducted with reference to 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:

- Decontamination procedures – including washing and rinsing of re-useable equipment, the use of new disposable gloves and the use of sampling containers provided by the laboratory.
- 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.
- Blind/split duplicate and blank sample frequency – refer to assessment below.
- Calibration of measuring equipment was carried out prior to the sampling event, the calibration certificate and field check prior to use is provided in Appendix D.

## C-1-2 Sampling and analysis quality control

The QC samples collected during the investigation are described below.

- Blind duplicate/Intra laboratory duplicate: Blind replicates are used to identify the variation in the analyte concentration between samples from the same sampling point and the repeatability of the laboratory's analysis.
- Split duplicate/Inter laboratory duplicate: Split samples provide an indication of the repeatability of the results between laboratories.
- Trip blanks: 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. Trip blanks were analysed for PFAS.

## C-1-3 Field QA/QC samples

Duplicate pairs are presented in Table C2 in Appendix C.

Relative percentage difference (RPD) calculations are used to assess how closely primary and inter/intra duplicate sample results match. RPDs are a quantitative measure of the accuracy of the analytical results and are calculated in accordance with the procedure described in *AS 4482.1 – 2005* (Standards Australia 2005).

GHD has adopted the RPD range as summarised in Section C-1. However, it is noted that this will not always be achieved, particularly at low analyte concentrations. Where a result is below the laboratory limit of reporting (LOR) for one of the paired samples, the concentration assigned to that sample is the LOR. Where both results are reported below laboratory LOR the RPD is not calculated.

The RPD was calculated for each duplicate pair, and presented in Table C1 following this assessment, and exceedances of the RPD acceptance criteria are summarised in Table C2.

**Table C2** Duplicate pairs RPD exceedances

Media	Duplicate type	Primary sample ID	Duplicate sample ID	RPD exceedances (%)	
Water	Intra-laboratory	0026_MW008_250212	0026_QC101_250212	42	PFBS
				38	PFOS
				61	PFPeS
				42	PFHxS
				51	PFHpA
				47	PFHxA
				44	PFOA
				43	PFAS (Sum of Total)
				43	PFAS (Sum of Total)(WA DER List)
				41	Sum of PFHxS and PFOS
	Inter-laboratory	0026_MW008_250212	0026_QC201_250212	67	PFBS
				41	PFHpS
				53	PFOS
				67	PFPeS
				69	PFHxS
				51	PFHpA
				49	PFHxA
				53	PFOA
				34	PFPeA
				62	PFAS (Sum of Total)
63	PFAS (Sum of Total)(WA DER List)				
65	Sum of PFHxS and PFOS				

## C-2 Laboratory quality assurance / 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 (US EPA), American Public Health Association (APHA), AS and National Environment Protection (Assessment of Site Contamination) Measure (NEPM).

The individual testing laboratory 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 Eurofins/ALS QA/QC section of the certificates of analysis reports. All laboratory QA/QC results are documented with the laboratory certificates of analysis provided in Appendix E.

### C-2-1 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 C3.

Table C3 Permitted laboratory blind duplicate relative percentage difference (RPD) ranges

Magnitude of result	Permitted RPD range
< 10 x limit of reporting (LOR)	No limits
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 determine 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 acceptance criteria, indicates recoveries must lie between 70% and 130%.

#### 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 PFAS and 20-130% for Phenols.

## **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 in 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-3 QC Assessment

	Water
Primary laboratory and report numbers:	ALS: ES2428137
Secondary laboratory and report numbers:	Eurofins: 1133909

1. Field QA/QC sample collection	Water	Comments and DQI assessment
Number of Primary Samples analysed	28 (groundwater) 18 (surface water)	-
Number of Days Sampling	3	-
Intra-Laboratory Field Duplicates (1/10 samples)	4 (groundwater) 1 (surface water)	Sample frequency DQI met for Intra-laboratory duplicate samples.
Inter-Laboratory Field Duplicates (1/10 samples)	4 (groundwater) 1 (surface water)	Sample frequency DQI for inter-laboratory duplicate samples met.
Trip Blanks (1/ batch)	2	Sample frequency DQI met.
Trip Spikes (1/ batch)	-	Trip spike not required.
Rinsate Blanks (1/equipment/day)	3	Rinsate blank frequency DQI met.
2. Sample Handling	Water	Comments and DQI assessment
Were the sample holding times met?	Yes	-
Were the samples in proper custody between the field and reaching this laboratory?	Yes	-
Were the samples properly and adequately preserved?	Yes	-
Did the laboratory receive the samples in good condition	Yes	-
3. Precision/Accuracy Assessment	Water	Comments and DQI assessment
Was a NATA registered laboratory used?	Yes	-
Did the laboratory perform the requested tests?	Yes	-
Were the laboratory methods adopted NATA endorsed?	Yes	-
Were the reporting limits satisfactory?	Yes	-
Was the NATA Seal on the reports?	Yes	-
Did an authorised person sign the reports?	Yes	-
4. Field Duplicates assessment	Water	Comments and DQI assessment
Were an adequate number of intra and inter-laboratory field duplicates analysed?	Yes	DQI met for water.
PFAS	Yes	RPD exceedance as outlined in Table C2. GHD have confirmed with the field team that the standard operating procedures (SOPs) were followed, so variation is unlikely to be due to sampling procedure. The variation may be due to the high sensitivity of the laboratory analytical method.

		The maximum concentration of duplicate pairs has been considered for this report as a conservative measure.
<b>5. Trip Blanks/Rinsates</b>	<b>Water</b>	<b>Comments and DQI assessment</b>
Were an adequate number of trip blanks analysed?	Yes	-
Were an adequate number of rinsate blanks analysed?	Yes	-
Were the trip blanks free of contamination?	Yes	-
Were the rinsate blanks free of contaminants? (If no, were contaminants present also detected in the samples/ are they common laboratory chemicals.)	Yes	-
<b>6. Trip Spikes</b>	<b>Water</b>	<b>Comments and DQI assessment</b>
Were an adequate number of Trip Spikes analysed?	N/A	-
Were the Trip Spike results within control limits?	N/A	-
<b>7. Laboratory Internal Quality Control Procedures – Pass/fail</b>	<b>Water</b>	<b>Comments and DQI assessment</b>
Method Blanks	Pass	DQI requirements met.
Matrix Spikes	Fail	DQI requirements not met. An expected rate of 5% is required – an actual rate of 0% was achieved. The required frequency of matrix spikes was not met due to the volume of sample bottles (2 x 20mL) provided by the laboratory being insufficient for both the analysis and the lab QC. Other internal laboratory spikes (laboratory control spikes (LCS) and surrogates) were within control limits. Although MS frequency was not met, it is considered not to have a material impact of the usability of the data for the purpose of this assessment.
Laboratory Control Samples/Spikes	Pass	DQI requirements met.
Laboratory Duplicates	Fail	DQI requirements not met. An expected rate of 10% is required – an actual rate of 0% was achieved. The required frequency of laboratory duplicates was not met due to the volume of sample bottles (2 x 20 mL) provided by the laboratory being insufficient for both the analysis and the lab QC. Other internal laboratory QC was conducted which can verify the precision and reproducibility of the laboratory’s analytical methods such as LCS, method blanks and surrogates (which were all within control limits). Although lab duplicate frequency was not met, it is considered not to have a material impact of the usability of the data for the purpose of this assessment.
Surrogates	Pass	DQI requirements met.

## C-3-1 QC Summary

QC parameters	Satisfactory	Partially Satisfactory	Unsatisfactory	Comments and DQI assessment
Field QA/QC sample collection	X			-
Sample Handling	X			-
Precision/ Accuracy assessment	X			-
Field QA/QC assessment	X			-
Laboratory Internal QA/QC	X			-

Data Usability		Comments
<del>Data Directly Usable</del>		
Data Usable with the following qualifications	X	On balance of the above, assessment data is considered adequate for the purpose of the investigation, noting that the maximum value of duplicate pairs should be used for assessment.
<del>Data Not Usable</del>		

QA/QC Report Prepared by: Lewis Roso

QA/QC Report Checked by: Helen Milne



Appendix C  
Table C1  
Relative Percentage Differences

Location Code	SW123		RPD	SW123		RPD	MW008		RPD	MW008		RPD	MW012		RPD		
	Date	Field ID		Date	Field ID		Date	Field ID		Date	Field ID		Date	Field ID			
Sample Type	Normal		RPD	Normal		RPD	Normal		RPD	Normal		RPD	Normal		RPD		
Lab Report Number	ES2504684			ES2504684			ES2504684			ES2504684			ES2504684			ES2504684	
Matrix Type	Water		RPD	Water		RPD	Water		RPD	Water		RPD	Water		RPD		
Unit	EQL																
<b>PFAS - Perfluoroalkyl Sulfonic Acids</b>																	
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.65	1.00	42	0.65	1.3	67	< 0.02	< 0.02	NC
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC
Perfluorononane sulfonate (PFNS)	µg/L	0.01	-	-	-	-	< 0.01	-	-	-	-	-	< 0.01	-	-	-	-
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.29	0.47	47	0.29	0.44	41	< 0.02	< 0.02	NC
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	2.44	3.59	38	2.44	4.2	53	0.06	0.06	0
Perfluoropropanesulfonic acid (PFPrS)	µg/L	0.01	-	-	-	-	< 0.01	-	-	-	-	-	0.35	-	-	-	-
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.65	1.22	61	0.65	1.3	67	< 0.02	< 0.02	NC
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	6.78	10.4	42	6.78	14	69	0.04	0.04	0
<b>PFAS - Perfluoroalkyl Carboxylic Acids</b>																	
Perfluorobutanoic acid (PFBA)	µg/L	0.05	< 0.1	< 0.1	NC	< 0.1	< 0.05	NC	< 0.1	0.1	0	< 0.1	0.10	0	< 0.1	< 0.1	NC
Perfluorodecanoic acid (PFDA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.19	0.32	51	0.19	0.32	51	< 0.02	< 0.02	NC
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	1.45	2.33	47	1.45	2.4	49	< 0.02	< 0.02	NC
Perfluorononanoic acid (PFNA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC
Perfluorooctanoic acid (PFOA)	µg/L	0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	0.25	0.39	44	0.25	0.43	53	< 0.01	< 0.01	NC
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.22	0.33	40	0.22	0.31	34	< 0.02	< 0.02	NC
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC
<b>PFAS - Perfluoroalkyl Sulfonamide</b>																	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC
N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC
<b>PFAS - Fluorotelomer Sulfonic Acids</b>																	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC
6:2 Fluorotelomer Sulfonate (6:2 FTS)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC
<b>PFAS - Sums</b>																	
PFAS (Sum of Total)	µg/L	0.01	< 0.01	< 0.01	NC	< 0.01	< 0.1	NC	13.2	20.5	43	13.2	25.15	62	0.10	0.10	0
PFAS (Sum of Total)(WA DER List)	µg/L	0.01	< 0.01	< 0.01	NC	< 0.01	< 0.05	NC	12.0	18.5	43	12.0	23.06	63	0.10	0.10	0
Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	0.01	-	-	-	-	< 0.01	-	-	-	-	-	4.63	-	-	-	-
Sum of PFHxS and PFOS	µg/L	0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	9.22	14.0	41	9.22	18.2	65	0.10	0.10	0
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	0.01	-	-	-	-	< 0.01	-	-	-	-	-	18.63	-	-	-	-

**Comment**

NC = not calculated

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

\*\*Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 200 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL) )

\*\*\*Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.



Appendix C  
Table C1  
Relative Percentage Differences

Location Code	MW012		MW018		RPD	MW018		RPD	MW203		RPD	MW213		MW213		RPD	
	Date	Field ID	Date	Field ID		Date	Field ID		Date	Field ID		Date	Field ID	Date	Field ID		Date
Sample Type	Normal	Interlab_D	Normal	Field_D	Normal	Field_D	Normal	Field_D	Normal	Field_D	Normal	Field_D	Normal	Field_D	Normal	Field_D	
Lab Report Number	ES2504684	1190103	ES2504684	ES2504684	ES2504684	1190103	ES2504684	1190103	ES2504684	1190103	ES2504684	1190103	ES2504684	1190103	ES2504684	1190103	
Matrix Type	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	
Unit	EQL																
<b>PFAS - Perfluoroalkyl Sulfonic Acids</b>																	
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.69	0.63	9	0.69	0.72	4
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC
Perfluorononane sulfonate (PFNS)	µg/L	0.01	-	< 0.01	-	-	-	-	< 0.01	-	-	-	-	-	-	< 0.01	-
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.22	0.18	20	0.22	0.18	20
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	0.06	0.08	29	0.02	< 0.01	67	0.02	0.01	67	4.53	3.44	27	4.53	3.8	18
Perfluoropropanesulfonic acid (PFPrS)	µg/L	0.01	-	< 0.01	-	-	-	-	< 0.01	-	-	-	-	-	-	0.30	-
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.75	0.77	3	0.75	0.75	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.04	0.05	22	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	5.01	4.81	4	5.01	6.5	26
<b>PFAS - Perfluoroalkyl Carboxylic Acids</b>																	
Perfluorobutanoic acid (PFBA)	µg/L	0.05	< 0.1	< 0.05	NC	< 0.1	< 0.1	NC	< 0.1	< 0.05	NC	< 0.1	< 0.1	NC	< 0.1	0.07	0
Perfluorodecanoic acid (PFDA)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	0.10	0.10	0	0.10	0.11	10
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	< 0.02	0.01	0	0.02	0.02	0	0.02	0.03	40	0.86	0.70	21	0.86	0.83	4
Perfluorononanoic acid (PFNA)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC
Perfluorooctanoic acid (PFOA)	µg/L	0.01	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	< 0.01	< 0.01	NC	0.20	0.18	11	0.20	0.21	5
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	< 0.02	< 0.01	NC	0.03	0.02	40	0.03	0.03	0	0.14	0.13	7	0.14	0.13	7
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC	< 0.02	< 0.02	NC	< 0.02	< 0.01	NC
<b>PFAS - Perfluoroalkyl Sulfonamide</b>																	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	0.02	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC
N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC	< 0.02	< 0.02	NC	< 0.02	< 0.05	NC
<b>PFAS - Fluorotelomer Sulfonic Acids</b>																	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC
6:2 Fluorotelomer Sulfonate (6:2 FTS)	µg/L	0.05	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC	< 0.05	< 0.05	NC
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC	< 0.05	< 0.05	NC	< 0.05	< 0.01	NC
<b>PFAS - Sums</b>																	
PFAS (Sum of Total)	µg/L	0.01	0.10	0.14	33	0.07	0.04	55	0.07	< 0.1	0	12.8	11.2	13	12.8	13.6	6
PFAS (Sum of Total)(WA DER List)	µg/L	0.01	0.10	0.14	33	0.07	0.04	55	0.07	0.07	0	11.5	9.99	14	11.5	12.37	7
Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	0.01	-	0.08	-	-	-	-	-	0.01	-	-	-	-	-	4.01	-
Sum of PFHxS and PFOS	µg/L	0.01	0.10	0.13	26	0.02	< 0.01	67	0.02	0.01	67	9.54	8.25	15	9.54	10.3	8
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	0.01	-	0.13	-	-	-	-	-	0.01	-	-	-	-	-	10.51	-

**Comment**

NC = not calculated

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

\*\*Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 200 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

\*\*\*Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.



Appendix C  
Table C2  
Trip Blank and Rinse Blank Results

	Unit	EQL	Date	Date	Date	Date	Date
			Field ID	Field ID	Field ID	Field ID	Field ID
			Sample Type	Sample Type	Sample Type	Sample Type	Sample Type
			Lab Report Number	Lab Report Number	Lab Report Number	Lab Report Number	Lab Report Number
			11 Feb 2025	13 Feb 2025	13 Feb 2025	13 Feb 2025	13 Feb 2025
			0026_QC300_250211	0026_QC301_250213	0026_QC302_250213	0026_QC500_250213	0026_QC501_250213
			Rinse	Rinse	Rinse	Trip_B	Trip_B
			ES2504684	ES2504684	ES2504684	ES2504684	ES2504684
PFAS- Perfluoroalkyl Sulfonic Acids							
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFAS- Perfluoroalkyl Carboxylic Acids							
Perfluorobutanoic acid (PFBA)	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Perfluorodecanoic acid (PFDA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluorododecanoic acid (PFDoDA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluorononanoic acid (PFNA)	µg/L	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
Perfluoropentanoic acid (PFPeA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PFAS- Perfluoroalkyl Sulfonamide							
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	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
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	µg/L	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
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
PFAS- Fluorotelomer Sulfonic Acids							
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
6:2 Fluorotelomer Sulfonate (6:2 FTS)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
PFAS- Sums							
PFAS(Sum of Total)	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFAS(Sum of Total)(WA DER List)	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sum of PFHxS and PFOS	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

# **Appendix D**

## **Equipment calibration**

**Certificate of Service and Calibration**  
**Interface Meter**  
**Heron H.Oil**

<b>Company Name</b>	WAM Scientific
<b>Office Address</b>	26 Bungarra Crescent, Chipping Norton NSW 2170
<b>Phone Number</b>	+61 405 241 484
<b>Contact Name</b>	William Pak
<b>Instrument</b>	Heron H.Oil Interface Meter (60m)
<b>Serial Number</b>	01-8288
<b>Client Name</b>	Jarrad Mawbey (GHD)
<b>Project Number</b>	12626622

Instrument Check			
Item	Test	Test Passed	Comments
9V Battery	Klein Tools MM300 Multimeter	✓	Battery voltage reading above 7.9V
Battery Box	Check	✓	No damage
Face and Back Plates	Check	✓	No damage
Thumb Screws	Check	✓	Rubber ends intact
Tape Hangar/Protector	Check	✓	No damage
On/Off Button	Operation	✓	Button is functional
Buzzer	Operation	✓	Intermittent tone in H <sub>2</sub> O, solid tone in product
LED Signal Light	Operation	✓	LED light functional – green and red
Probe	Operation/Check	✓	Decontaminated, cleaned and tested
Tape	Condition/Check	✓	Decontaminated and cleaned, no damage
Connection	Check	✓	Probe and link connected correctly and tightly
PCB	Operation	✓	Unit is fully functional
Electronics Panel	Orientation	✓	Correctly aligned

Instrument Readings		
Product	Buzzer	LED Light
H <sub>2</sub> O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

Declaration
<b>WAM Scientific</b> certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

<b>Checked By</b>	William Pak
<b>Calibration Date</b>	21/01/2025
<b>Calibration Due</b>	21/07/2025

<b>Company Name</b>	WAM Scientific
<b>Office Address</b>	26 Bungarra Crescent, Chipping Norton NSW 2170
<b>Phone Number</b>	+61 405 241 484
<b>Contact Name</b>	William Pak
<b>Instrument</b>	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
<b>Serial Number</b>	21C100007
<b>Client Name</b>	Jarrad Mawbey, Lewis Roso (GHD)
<b>Project Number</b>	12626622
<b>Comments</b>	-

**Instrument Check**

Item	Test	Test Passed	Comments
2 x Alkaline C-size Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 2.9V
Battery Saver Function	Operation	✓	Automatically turns off after 60 minutes if idle
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Connection Port and Cable	Condition/Check	✓	Clean, no damage
Monitor Housing	Condition/Check	✓	No damage
Firmware	Version	✓	4.0.0
pH Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
pH millivolts for pH 7.00	Calibration	✓	pH 7.00 calibration range between 0 mV ± 50 mV
pH millivolts for pH 4.00	Calibration	✓	pH 4 mV range +165 to +180 from 7 buffer mV value
pH slope	Calibration	✓	Range between 55 to 60 mV/pH (ideal value 59 mV)
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
ORP Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
ORP Reading	Calibration	✓	Within ± 80 mV of reference Zobell Reading
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
Conductivity/Temp Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
Conductivity Cell	Calibration	✓	Conductivity cell constant 5.0 ± 1.0 in GLP file
Clean Sensor Readings	Calibration	✓	Clean sensor reads less than 3 uS/cm in dry air
Dissolved Oxygen Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
DO Cap	Condition/Calibration	✓	1.25 mil PE membrane (yellow membrane)
DO Sensor in Use	Condition	✓	Polarographic DO sensor
DO Sensor Value	Calibration	✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA

**Instrument Readings**

Parameter	Standard Used	Reference No.	Calibration Value	Observed	Actual	Units
Temperature	Centre 370 Thermometer	Room Temp.	25.3	25.4	25.3	°C
pH	pH 4.00	417183	4.01	4.01	4.01	pH
pH	pH 7.00	419528	7.00	7.01	7.00	pH
Conductivity	2760 µs/cm at 25°C	399819	2760	2751	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	420448/418958	228.3	228.1	228.3	mV
Zero Dissolved O <sub>2</sub>	NaSO <sub>3</sub> in Distilled H <sub>2</sub> O	426184	0.0	0.2	0.0	%
100% Dissolved O <sub>2</sub>	100% Air Saturated H <sub>2</sub> O	Fresh Air	100.0	105.4	100.0	%

**Declaration**

**WAM Scientific** certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using solutions of known values.

<b>Calibrated By</b>	William Pak
<b>Calibration Date</b>	06/02/2025
<b>Calibration Due</b>	06/08/2025

<b>Company Name</b>	WAM Scientific
<b>Office Address</b>	26 Bungarra Crescent, Chipping Norton NSW 2170
<b>Phone Number</b>	+61 405 241 484
<b>Contact Name</b>	William Pak
<b>Instrument</b>	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
<b>Serial Number</b>	22H104712
<b>Client Name</b>	Jarrad Mawbey, Lewis Roso (GHD)
<b>Project Number</b>	12626622
<b>Comments</b>	-

**Instrument Check**

Item	Test	Test Passed	Comments
2 x Alkaline C-size Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 2.9V
Battery Saver Function	Operation	✓	Automatically turns off after 60 minutes if idle
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Connection Port and Cable	Condition/Check	✓	Clean, no damage
Monitor Housing	Condition/Check	✓	No damage
Firmware	Version	✓	4.0.0
pH Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
pH millivolts for pH 7.00	Calibration	✓	pH 7.00 calibration range between 0 mV ± 50 mV
pH millivolts for pH 4.00	Calibration	✓	pH 4 mV range +165 to +180 from 7 buffer mV value
pH slope	Calibration	✓	Range between 55 to 60 mV/pH (ideal value 59 mV)
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
ORP Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
ORP Reading	Calibration	✓	Within ± 80 mV of reference Zobell Reading
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
Conductivity/Temp Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
Conductivity Cell	Calibration	✓	Conductivity cell constant 5.0 ± 1.0 in GLP file
Clean Sensor Readings	Calibration	✓	Clean sensor reads less than 3 uS/cm in dry air
Dissolved Oxygen Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
DO Cap	Condition/Calibration	✓	1.25 mil PE membrane (yellow membrane)
DO Sensor in Use	Condition	✓	Polarographic DO sensor
DO Sensor Value	Calibration	✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA

**Instrument Readings**

Parameter	Standard Used	Reference No.	Calibration Value	Observed	Actual	Units
Temperature	Centre 370 Thermometer	Room Temp.	25.3	25.5	25.3	°C
pH	pH 4.00	417183	4.01	4.03	4.01	pH
pH	pH 7.00	419528	7.00	7.00	7.00	pH
Conductivity	2760 µs/cm at 25°C	399819	2760	2744	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	420448/418958	228.3	228.7	228.3	mV
Zero Dissolved O <sub>2</sub>	NaSO <sub>3</sub> in Distilled H <sub>2</sub> O	426184	0.0	0.5	0.0	%
100% Dissolved O <sub>2</sub>	100% Air Saturated H <sub>2</sub> O	Fresh Air	100.0	103.4	100.0	%

**Declaration**

**WAM Scientific** certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using solutions of known values.

<b>Calibrated By</b>	William Pak
<b>Calibration Date</b>	06/02/2025
<b>Calibration Due</b>	06/08/2025

# **Appendix E**

**Laboratory certificates and chain of custody documents**

GHD Pty Ltd NSW  
 Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

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:** Dave Hager

**Report** 1190103-W  
 Project name ACT\_0021\_PFASMGMT\_25  
 Project ID 12626622  
 Received Date Feb 20, 2025

Client Sample ID			0026_QC200_2 5011	0026_QC201_2 5012	0026_QC202_2 5013	0026_QC203_2 5013
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S25-Fe0051419	S25-Fe0051420	S25-Fe0051421	S25-Fe0051422
Date Sampled			Feb 11, 2025	Feb 12, 2025	Feb 13, 2025	Feb 13, 2025
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	< 0.05	0.10	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	< 0.01	0.31	< 0.01	0.03
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	< 0.01	2.4	0.01	0.03
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	< 0.01	0.32	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	< 0.01	0.43	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	104	101	107	94
13C5-PFPeA (surr.)	1	%	118	138	110	131
13C5-PFHxA (surr.)	1	%	155	128	143	143
13C4-PFHpA (surr.)	1	%	133	141	113	148
13C8-PFOA (surr.)	1	%	124	114	108	129
13C5-PFNA (surr.)	1	%	109	129	151	148
13C6-PFDA (surr.)	1	%	158	132	139	143
13C2-PFUnDA (surr.)	1	%	126	141	133	154
13C2-PFDoDA (surr.)	1	%	142	150	137	146
13C2-PFTeDA (surr.)	1	%	142	137	113	136
<b>Perfluoroalkyl sulfonamido substances</b>						
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	146	150	141	147
D3-N-MeFOSA (surr.)	1	%	151	147	149	121

Client Sample ID			0026_QC200_2 5011	0026_QC201_2 5012	0026_QC202_2 5013	0026_QC203_2 5013
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S25-Fe0051419	S25-Fe0051420	S25-Fe0051421	S25-Fe0051422
Date Sampled			Feb 11, 2025	Feb 12, 2025	Feb 13, 2025	Feb 13, 2025
Test/Reference	LOR	Unit				
<b>Perfluoroalkyl sulfonamido substances</b>						
D5-N-EtFOSA (surr.)	1	%	176	185	184	INT
D7-N-MeFOSE (surr.)	1	%	148	151	146	146
D9-N-EtFOSE (surr.)	1	%	162	154	158	158
D5-N-EtFOSAA (surr.)	1	%	120	119	124	126
D3-N-MeFOSAA (surr.)	1	%	120	115	118	124
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	< 0.01	1.3	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	< 0.01	0.35	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	< 0.01	1.3	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	< 0.01	14	0.05	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	< 0.01	0.44	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	< 0.01	4.2	0.08	0.01
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	118	130	105	114
18O2-PFHxS (surr.)	1	%	130	96	137	129
13C8-PFOS (surr.)	1	%	129	150	150	134
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	190	140	176	118
13C2-6:2 FTSA (surr.)	1	%	137	95	126	133
13C2-8:2 FTSA (surr.)	1	%	139	131	158	INT
13C2-10:2 FTSA (surr.)	1	%	129	157	144	196
<b>PFASs Summations</b>						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	18.2	0.13	0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	4.63	0.08	0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	18.63	0.13	0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	23.06	0.14	0.07
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	25.15	0.14	< 0.1

Client Sample ID			0026_QC204_2 5013
Sample Matrix			Water
Eurofins Sample No.			S25-Fe0051423
Date Sampled			Feb 13, 2025
Test/Reference	LOR	Unit	
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>			
Perfluorobutanoic acid (PFBA) <sup>N11</sup>	0.05	ug/L	0.07
Perfluoropentanoic acid (PFPeA) <sup>N11</sup>	0.01	ug/L	0.13
Perfluorohexanoic acid (PFHxA) <sup>N11</sup>	0.01	ug/L	0.83
Perfluoroheptanoic acid (PFHpA) <sup>N11</sup>	0.01	ug/L	0.11
Perfluorooctanoic acid (PFOA) <sup>N11</sup>	0.01	ug/L	0.21

<b>Client Sample ID</b>			<b>0026_QC204_2 5013</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins Sample No.</b>			<b>S25-Fe0051423</b>
<b>Date Sampled</b>			<b>Feb 13, 2025</b>
Test/Reference	LOR	Unit	
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>			
Perfluorononanoic acid (PFNA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA) <sup>N11</sup>	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA) <sup>N11</sup>	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	107
13C5-PFPeA (surr.)	1	%	113
13C5-PFHxA (surr.)	1	%	131
13C4-PFHpA (surr.)	1	%	113
13C8-PFOA (surr.)	1	%	121
13C5-PFNA (surr.)	1	%	164
13C6-PFDA (surr.)	1	%	161
13C2-PFUnDA (surr.)	1	%	161
13C2-PFDoDA (surr.)	1	%	189
13C2-PFTeDA (surr.)	1	%	INT
<b>Perfluoroalkyl sulfonamido substances</b>			
Perfluorooctane sulfonamide (FOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) <sup>N11</sup>	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) <sup>N11</sup>	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) <sup>N11</sup>	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	159
D3-N-MeFOSA (surr.)	1	%	141
D5-N-EtFOSA (surr.)	1	%	184
D7-N-MeFOSE (surr.)	1	%	163
D9-N-EtFOSE (surr.)	1	%	183
D5-N-EtFOSAA (surr.)	1	%	161
D3-N-MeFOSAA (surr.)	1	%	141
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>			
Perfluorobutanesulfonic acid (PFBS) <sup>N11</sup>	0.01	ug/L	0.72
Perfluorononanesulfonic acid (PFNS) <sup>N15</sup>	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS) <sup>N15</sup>	0.01	ug/L	0.30
Perfluoropentanesulfonic acid (PFPeS) <sup>N15</sup>	0.01	ug/L	0.75
Perfluorohexanesulfonic acid (PFHxS) <sup>N11</sup>	0.01	ug/L	6.5
Perfluoroheptanesulfonic acid (PFHpS) <sup>N15</sup>	0.01	ug/L	0.18
Perfluorooctanesulfonic acid (PFOS) <sup>N11</sup>	0.01	ug/L	3.8
Perfluorodecanesulfonic acid (PFDS) <sup>N15</sup>	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	146
18O2-PFHxS (surr.)	1	%	111
13C8-PFOS (surr.)	1	%	136

<b>Client Sample ID</b>			<b>0026_QC204_2 5013</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins Sample No.</b>			<b>S25-Fe0051423</b>
<b>Date Sampled</b>			<b>Feb 13, 2025</b>
Test/Reference	LOR	Unit	
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>			
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01
1H,1H,2H,2H-perfluorooctanesulfonic acid(6:2 FTSA) <sup>N11</sup>	0.05	ug/L	< 0.05
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2 FTSA) <sup>N11</sup>	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	INT
13C2-6:2 FTSA (surr.)	1	%	155
13C2-8:2 FTSA (surr.)	1	%	INT
13C2-10:2 FTSA (surr.)	1	%	INT
<b>PFASs Summations</b>			
Sum (PFHxS + PFOS)*	0.01	ug/L	10.3
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	4.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	10.51
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	12.37
Sum of PFASs (n=30)*	0.1	ug/L	13.6

**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)	Sydney	Feb 27, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 27, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFASs)	Sydney	Feb 27, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 27, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

<b>Melbourne</b> 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	<b>Geelong</b> 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	<b>Sydney</b> 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	<b>Canberra</b> Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	<b>Brisbane</b> 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	<b>Newcastle</b> 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	<b>Perth</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	<b>Auckland</b> 35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	<b>Auckland (Focus)</b> Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	<b>Christchurch</b> 43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	<b>Tauranga</b> 1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402
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**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000  
  
**Project Name:** ACT\_0021\_PFASMGMT\_25  
**Project ID:** 12626622

**Order No.:**  
**Report #:** 1190103  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** Feb 20, 2025 1:15 PM  
**Due:** Feb 27, 2025  
**Priority:** 5 Day  
**Contact Name:** Dave Hager

**Eurofins Analytical Services Manager : Adam Bateup**

<b>Sample Detail</b>						Per- and Polyfluoroalkyl Substances (PFASs)
<b>Sydney Laboratory - NATA # 1261 Site # 18217</b>						X
<b>External Laboratory</b>						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	0026_QC200_25011	Feb 11, 2025		Water	S25-Fe0051419	X
2	0026_QC201_25012	Feb 12, 2025		Water	S25-Fe0051420	X
3	0026_QC202_25013	Feb 13, 2025		Water	S25-Fe0051421	X
4	0026_QC203_25013	Feb 13, 2025		Water	S25-Fe0051422	X
5	0026_QC204_25013	Feb 13, 2025		Water	S25-Fe0051423	X
<b>Test Counts</b>						5

## Internal Quality Control Review and Glossary

### General

- 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.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- 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

<b>mg/kg:</b> milligrams per kilogram	<b>mg/L:</b> milligrams per litre	<b>ppm:</b> parts per million
<b>µg/L:</b> micrograms per litre	<b>ppb:</b> parts per billion	<b>%:</b> Percentage
<b>org/100 mL:</b> Organisms per 100 millilitres	<b>NTU:</b> Nephelometric Turbidity Units	<b>MPN/100 mL:</b> Most Probable Number of organisms per 100 millilitres
<b>CFU:</b> Colony Forming Unit	<b>Colour:</b> Pt-Co Units (CU)	

### Terms

<b>APHA</b>	American Public Health Association
<b>CEC</b>	Cation Exchange Capacity
<b>COC</b>	Chain of Custody
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>CRM</b>	Certified Reference Material (ISO17034) - reported as percent recovery.
<b>Dry</b>	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>LOR</b>	Limit of Reporting.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>Method Blank</b>	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.
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>SRA</b>	Sample Receipt Advice
<b>Surr - Surrogate</b>	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
<b>TBTO</b>	Tributyltin oxide ( <i>bis</i> -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.
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>TEQ</b>	Toxic Equivalency Quotient or Total Equivalence
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 6.0
<b>US EPA</b>	United States Environmental Protection Agency
<b>WA DWER</b>	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

- 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.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 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
<b>Method Blank</b>						
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
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 (PFTTrDA)	ug/L	< 0.01		0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01		0.01	Pass	
<b>Method Blank</b>						
<b>Perfluoroalkyl sulfonamido substances</b>						
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	
<b>Method Blank</b>						
<b>Perfluoroalkyl sulfonic acids (PFASs)</b>						
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	
<b>Method Blank</b>						
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>						
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	
<b>LCS - % Recovery</b>						
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>						
Perfluorobutanoic acid (PFBA)	%	100		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	101		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	96		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	99		50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	93		50-150	Pass	
Perfluorononanoic acid (PFNA)	%	116		50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	120		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	115		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	106		50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	%	127		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	98		50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>LCS - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>								
Perfluorooctane sulfonamide (FOSA)	%	107			50-150	Pass		
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass		
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	111			50-150	Pass		
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	84			50-150	Pass		
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	103			50-150	Pass		
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	96			50-150	Pass		
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	117			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA's)</b>								
Perfluorobutanesulfonic acid (PFBS)	%	117			50-150	Pass		
Perfluorononanesulfonic acid (PFNS)	%	102			50-150	Pass		
Perfluoropropanesulfonic acid (PFPrS)	%	83			50-150	Pass		
Perfluoropentanesulfonic acid (PFPeS)	%	88			50-150	Pass		
Perfluorohexanesulfonic acid (PFHxS)	%	115			50-150	Pass		
Perfluoroheptanesulfonic acid (PFHpS)	%	93			50-150	Pass		
Perfluorooctanesulfonic acid (PFOS)	%	117			50-150	Pass		
Perfluorodecanesulfonic acid (PFDS)	%	96			50-150	Pass		
<b>LCS - % Recovery</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)</b>								
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	101			50-150	Pass		
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	106			50-150	Pass		
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	106			50-150	Pass		
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	101			50-150	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA's)</b>								
Perfluoropentanesulfonic acid (PFPeS)	N25-Fe0048488	NCP	%	104		50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S25-Fe0041708	NCP	%	98		50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S25-Fe0041708	NCP	%	92		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl carboxylic acids (PFCA's)</b>								
Perfluorobutanoic acid (PFBA)	S25-Fe0051423	CP	%	63		50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S25-Fe0051423	CP	%	68		50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S25-Fe0051423	CP	%	84		50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S25-Fe0051423	CP	%	120		50-150	Pass	
Perfluorooctanoic acid (PFOA)	S25-Fe0051423	CP	%	61		50-150	Pass	
Perfluorononanoic acid (PFNA)	S25-Fe0051423	CP	%	109		50-150	Pass	
Perfluorodecanoic acid (PFDA)	S25-Fe0051423	CP	%	108		50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S25-Fe0051423	CP	%	107		50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S25-Fe0051423	CP	%	120		50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S25-Fe0051423	CP	%	118		50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S25-Fe0051423	CP	%	111		50-150	Pass	
<b>Spike - % Recovery</b>								
<b>Perfluoroalkyl sulfonamido substances</b>								
Perfluorooctane sulfonamide (FOSA)	S25-Fe0051423	CP	%	98		50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S25-Fe0051423	CP	%	98			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S25-Fe0051423	CP	%	106			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S25-Fe0051423	CP	%	115			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S25-Fe0051423	CP	%	100			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S25-Fe0051423	CP	%	103			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S25-Fe0051423	CP	%	110			50-150	Pass	
<b>Spike - % Recovery</b>									
<b>Perfluoroalkyl sulfonic acids (PFSAs)</b>				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S25-Fe0051423	CP	%	59			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S25-Fe0051423	CP	%	94			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S25-Fe0051423	CP	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S25-Fe0051423	CP	%	63			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S25-Fe0051423	CP	%	102			50-150	Pass	
<b>Spike - % Recovery</b>									
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S25-Fe0051423	CP	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S25-Fe0051423	CP	%	114			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S25-Fe0051423	CP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S25-Fe0051423	CP	%	90			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluoropentanoic acid (PFPeA)	N25-Fe0048487	NCP	ug/L	0.15	0.15	5.0	30%	Pass	
<b>Duplicate</b>									
<b>Perfluoroalkyl carboxylic acids (PFCAs)</b>				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S25-Fe0051422	CP	ug/L	0.03	0.03	10	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonamido substances</b>				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
<b>Duplicate</b>								
<b>Perfluoroalkyl sulfonic acids (PFSA)</b>				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S25-Fe0051422	CP	ug/L	0.01	0.01	3.0	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
<b>Duplicate</b>								
<b>n:2 Fluorotelomer sulfonic acids (n:2 FTSA)</b>				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S25-Fe0051422	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S25-Fe0051422	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S25-Fe0051422	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
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:**

Nileshni Goundar	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-PFAS



**Glenn Jackson**  
**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 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 +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

## Sample Receipt Advice

**Company name:** GHD Pty Ltd NSW  
**Contact name:** Dave Hager  
**Project name:** ACT\_0021\_PFASMGMT\_25  
**Project ID:** 12626622  
**Turnaround time:** 5 Day  
**Date/Time received:** Feb 20, 2025 1:15 PM  
**Eurofins reference:** 1190103

## 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 : 12.3 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.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

## Notes

## Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

**Adam Bateup on phone : or by email: [Adam.Bateup@eurofinsanz.com](mailto:Adam.Bateup@eurofinsanz.com)**

Results will be delivered electronically via email to Dave Hager - [dave.hager@ghd.com.au](mailto:dave.hager@ghd.com.au).

*Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.*



web: www.eurofins.com.au

email: EnviroSales@eurofinsanz.com

<b>Melbourne</b> 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	<b>Geelong</b> 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	<b>Sydney</b> 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	<b>Canberra</b> Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	<b>Brisbane</b> 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	<b>Newcastle</b> 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	<b>Perth</b> 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	<b>Auckland</b> 35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	<b>Auckland (Focus)</b> Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	<b>Christchurch</b> 43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	<b>Tauranga</b> 1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402
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**Company Name:** GHD Pty Ltd NSW  
**Address:** Level 15, 133 Castlereagh Street  
 Sydney  
 NSW 2000

**Project Name:** ACT\_0021\_PFASMGMT\_25  
**Project ID:** 12626622

**Order No.:**  
**Report #:** 1190103  
**Phone:** 02 9239 7100  
**Fax:** 02 9239 7199

**Received:** Feb 20, 2025 1:15 PM  
**Due:** Feb 27, 2025  
**Priority:** 5 Day  
**Contact Name:** Dave Hager

**Eurofins Analytical Services Manager : Adam Bateup**

<b>Sample Detail</b>						Per- and Polyfluoroalkyl Substances (PFASs)	
Sydney Laboratory - NATA # 1261 Site # 18217							X
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	0026_QC200_25011	Feb 11, 2025		Water	S25-Fe0051419		X
2	0026_QC201_25012	Feb 12, 2025		Water	S25-Fe0051420		X
3	0026_QC202_25013	Feb 13, 2025		Water	S25-Fe0051421	X	
4	0026_QC203_25013	Feb 13, 2025		Water	S25-Fe0051422	X	
5	0026_QC204_25013	Feb 13, 2025		Water	S25-Fe0051423	X	
<b>Test Counts</b>						5	



mgt

**Sydney**

Unit F3 - 6 Building F, 16 Mars Road, Lane Cove  
Phone: +612 9900 8400  
Email: enviro.syd@mgllabmark.com.au

**Brisbane**

Unit 1-21 Smellwood Place, Murrarie  
Phone: +617 3902 4600  
Email: enviro.bris@mgllabmark.com.au

**Melbourne**

2 Kingston Town Close, Oakleigh, VIC 3166  
Phone: +613 8564 5000 Fax: +613 8564 5090  
Email: enquires.melb@mgllabmark.com.au

### CHAIN OF CUSTODY RECORD

<b>CLIENT DETAILS</b>		Page <u>  1  </u> of <u>  1  </u>	
<b>Company Name :</b> GHD Pty Ltd, Sydney		<b>Contact Name :</b> Jarrad Mawbey 0411 379 023	
<b>Office Address :</b> Level 15, 133 Castlereagh Street, Sydney NSW 2000		<b>Purchase Order :</b> 12626622	
<b>Project Manager :</b> Dave Hager		<b>PROJECT Number :</b> 12626622	
<b>Email for results :</b> dave.hager@ghd.com; esdat+ghd_au@esdatlabsync.net; helen.milne@ghd.com; jarrad.mawbey@ghd.com		<b>PROJECT Name :</b> ACT_0021_PFASMGMT_25	
		<b>COC Number :</b>	
		<b>Eurofins   mgt quote ID :</b>	
		<b>Data output format:</b> ESDAT	

<b>Special Directions &amp; Comments :</b>  <b>Forwarded from ALS</b>  <b>**Match ALS standard LORs</b>	<b>Analytes</b>								<b>Some common holding times (with correct preservation). For further information contact the lab</b>								
	PFAS Extended Suite - 30 PFAS									<b>Waters</b>				<b>Soils</b>			
										BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days				
										TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days				
								Heavy Metals	6 months	Heavy Metals	6 months						
								Mercury, CrVI	28 days	Mercury, CrVI	28 days						
								Microbiological testing	24 hours	Microbiological testing	72 hours						
								BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days						
								Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours						
								Ferrous iron	7 days	ASLP, TCLP	7 days						

<b>Eurofins   mgt DI water batch number:</b>																				
	Sample ID	Date	Matrix																	
1	0026_QC200_250211	2/11/2025	Water	X																
2	0026_QC201_250212	2/12/2025	Water	X																
3	0026_QC202_250213	13/2/2025	Water	X																
4	0026_QC203_250213	13/2/2025	Water	X																
5	0026_QC204_250213	13/2/2025	Water	X																
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				

<b>Containers:</b>								<b>Sample comments:</b>	
500P	250P	60P	1LA	40mL vial	250mL A	Jar	Bag		

<b>Relinquished By:</b> Jarrad Mawbey(GHD)	<b>Laboratory Staff</b> <i>J. Mawbey</i>	<b>Turn around time</b> 1 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> 3 DAY <input type="checkbox"/> 5 DAY <input checked="" type="checkbox"/> 10 DAY <input type="checkbox"/> Other: _____	<b>Method Of Shipment</b> <input type="checkbox"/> Courier <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal <b>Courier Consignment # :</b>	<b>Temperature on arrival:</b> <i>12.3°C</i>
	<b>Date &amp; Time :</b> 17/2/2025	<b>Date &amp; Time :</b> <i>17/2 1:15 PM</i>		
<b>Signature:</b> J Mawbey	<b>Signature:</b> <i>J Mawbey</i>			

*H07 119 0103*



## CERTIFICATE OF ANALYSIS

**Work Order** : **ES2504684**  
**Client** : **GHD PTY LTD**  
**Contact** : **MS HELEN MILNE**  
**Address** : **LEVEL 15, 133 CASTLEREAGH STREET**  
**SYDNEY NSW, AUSTRALIA 2000**  
**Telephone** : **+61 02 9239 7100**  
**Project** : **ACT\_0026\_PFASOMP\_25**  
**Order number** : **12626622**  
**C-O-C number** : **----**  
**Sampler** : **Jarrad Mawbey**  
**Site** : **----**  
**Quote number** : **ES23GHDSER0026**  
**No. of samples received** : **56**  
**No. of samples analysed** : **56**

**Page** : 1 of 27  
**Laboratory** : Environmental Division Sydney  
**Contact** : Samiksha Sathish  
**Address** : 277-289 Woodpark Road Smithfield NSW Australia 2164  
**Telephone** : +61-2-8784 8555  
**Date Samples Received** : 18-Feb-2025 11:30  
**Date Analysis Commenced** : 19-Feb-2025  
**Issue Date** : 25-Feb-2025 17:34



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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

### *Signatories*

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW



## General Comments

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

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

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

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

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	0026_SW013_250213	0026_SW014_250213	0026_SW065_250213	0026_SW001_250211	0026_SW006_250212
Sampling date / time					13-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00	11-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-001	ES2504684-002	ES2504684-003	ES2504684-004	ES2504684-005	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.13	0.03	0.25	<0.02	0.18	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.13	0.03	0.22	<0.02	0.16	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	1.51	0.29	2.66	<0.01	1.69	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.07	<0.02	0.10	<0.02	0.08	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.26	0.33	2.42	0.02	2.70	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.1	<0.1	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.06	<0.02	0.18	<0.02	0.08	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.30	0.04	0.58	<0.02	0.40	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	<0.02	0.08	<0.02	0.05	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	<0.01	0.10	<0.01	0.10	
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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_SW013_250213	0026_SW014_250213	0026_SW065_250213	0026_SW001_250211	0026_SW006_250212
Sampling date / time					13-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00	11-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-001	ES2504684-002	ES2504684-003	ES2504684-004	ES2504684-005	
				Result	Result	Result	Result	Result	
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<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	<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	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<b>4.62</b>	<b>0.72</b>	<b>6.81</b>	<b>0.02</b>	<b>5.52</b>	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<b>3.77</b>	<b>0.62</b>	<b>5.08</b>	<b>0.02</b>	<b>4.39</b>	
Sum of PFAS (WA DER List)	----	0.01	µg/L	<b>4.36</b>	<b>0.69</b>	<b>6.37</b>	<b>0.02</b>	<b>5.20</b>	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	<b>98.9</b>	<b>101</b>	<b>94.6</b>	<b>101</b>	<b>98.0</b>	
13C8-PFOA	----	0.02	%	<b>92.6</b>	<b>96.2</b>	<b>93.7</b>	<b>93.2</b>	<b>91.4</b>	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_SW124_250212	0026_SW018_250212	0026_SW008_250212	0026_SW004B_25021 1	0026_SW020_250211
Sampling date / time					12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	11-Feb-2025 00:00	11-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-006	ES2504684-007	ES2504684-008	ES2504684-009	ES2504684-010	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.29	0.75	0.09	0.06	0.09	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.28	0.66	0.11	0.06	0.08	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	2.20	6.28	1.15	0.59	1.02	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.08	0.40	0.04	0.02	0.03	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.40	7.90	1.07	0.62	0.97	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
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	0.07	0.29	0.04	0.02	0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.52	1.70	0.26	0.12	0.16	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.05	0.24	0.03	<0.02	<0.02	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.09	0.50	0.05	0.03	0.03	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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

				0026_SW124_250212	0026_SW018_250212	0026_SW008_250212	0026_SW004B_25021 1	0026_SW020_250211
Sampling date / time				12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	11-Feb-2025 00:00	11-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-006	ES2504684-007	ES2504684-008	ES2504684-009	ES2504684-010
				Result	Result	Result	Result	Result
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>								
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
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
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
<b>EP231P: PFAS Sums</b>								
Sum of PFAS	----	0.01	µg/L	<b>6.13</b>	<b>19.3</b>	<b>2.88</b>	<b>1.55</b>	<b>2.43</b>
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<b>4.60</b>	<b>14.2</b>	<b>2.22</b>	<b>1.21</b>	<b>1.99</b>
Sum of PFAS (WA DER List)	----	0.01	µg/L	<b>5.62</b>	<b>17.9</b>	<b>2.69</b>	<b>1.44</b>	<b>2.29</b>
<b>EP231S: PFAS Surrogate</b>								
13C4-PFOS	----	0.02	%	<b>101</b>	<b>93.7</b>	<b>99.4</b>	<b>93.7</b>	<b>99.8</b>
13C8-PFOA	----	0.02	%	<b>90.7</b>	<b>93.0</b>	<b>92.5</b>	<b>93.0</b>	<b>92.6</b>



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_SW049_250212	0026_SW012_250212	0026_SW007_250212	0026_SW106_250212	0026_SW009_250212
Sampling date / time				12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-011	ES2504684-012	ES2504684-013	ES2504684-014	ES2504684-015	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.06	0.30	0.05	0.44	0.16	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.04	0.26	0.04	0.38	0.16	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.46	2.77	0.46	4.40	2.32	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.12	0.02	0.19	0.10	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.81	3.76	0.62	5.13	4.50	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	0.2	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.05	0.14	0.08	0.44	0.10	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.12	0.52	0.15	1.16	0.46	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.08	0.02	0.17	0.05	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.12	0.02	0.24	0.11	
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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_SW049_250212	0026_SW012_250212	0026_SW007_250212	0026_SW106_250212	0026_SW009_250212
Sampling date / time					12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-011	ES2504684-012	ES2504684-013	ES2504684-014	ES2504684-015	ES2504684-015
				Result	Result	Result	Result	Result	Result
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<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	<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	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	1.58	8.22	1.46	13.0	8.06	8.06
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.27	6.53	1.08	9.53	6.82	6.82
Sum of PFAS (WA DER List)	----	0.01	µg/L	1.52	7.69	1.40	12.2	7.70	7.70
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	108	100	99.0	98.6	101	101
13C8-PFOA	----	0.02	%	91.3	89.3	90.7	95.1	93.8	93.8



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_SW123_250211	0026_SW005_250211	0026_SW002_250211	0026_MW001_250212	0026_MW213_250213
Sampling date / time				11-Feb-2025 00:00	11-Feb-2025 00:00	11-Feb-2025 00:00	12-Feb-2025 00:00	13-Feb-2025 00:00	
Compound	CAS Number	LOR	Unit	ES2504684-016	ES2504684-017	ES2504684-018	ES2504684-019	ES2504684-020	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.14	<0.02	<0.02	0.69	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.13	<0.02	<0.02	0.75	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	1.45	<0.01	0.06	5.01	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.06	<0.02	<0.02	0.22	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	1.90	0.02	0.33	4.53	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
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	0.10	<0.02	<0.02	0.14	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.32	<0.02	<0.02	0.86	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.05	<0.02	<0.02	0.10	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.07	<0.01	<0.01	0.20	
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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_SW123_250211	0026_SW005_250211	0026_SW002_250211	0026_MW001_250212	0026_MW213_250213
Sampling date / time				11-Feb-2025 00:00	11-Feb-2025 00:00	11-Feb-2025 00:00	12-Feb-2025 00:00	13-Feb-2025 00:00	
Compound	CAS Number	LOR	Unit	ES2504684-016	ES2504684-017	ES2504684-018	ES2504684-019	ES2504684-020	
				Result	Result	Result	Result	Result	
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
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	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<0.01	4.28	0.02	0.39	12.8	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	3.35	0.02	0.39	9.54	
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	4.03	0.02	0.39	11.5	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	92.6	100	92.7	102	98.4	
13C8-PFOA	----	0.02	%	94.1	91.8	89.3	92.6	89.8	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_MW073_250213	0026_MW002_250212	0026_MW026_250213	0026_MW072_250213	0026_MW044_250213
Sampling date / time				13-Feb-2025 00:00	12-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-021	ES2504684-022	ES2504684-023	ES2504684-024	ES2504684-025	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<b>0.31</b>	<0.02	<b>0.02</b>	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<b>0.25</b>	<0.02	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<b>2.47</b>	<0.01	<b>0.11</b>	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<b>0.08</b>	<0.02	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<b>0.03</b>	<b>1.80</b>	<0.01	<b>0.07</b>	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
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	<b>0.13</b>	<0.02	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<b>0.49</b>	<0.02	<b>0.02</b>	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<b>0.07</b>	<0.02	<0.02	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<b>0.11</b>	<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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_MW073_250213	0026_MW002_250212	0026_MW026_250213	0026_MW072_250213	0026_MW044_250213
Sampling date / time					13-Feb-2025 00:00	12-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-021	ES2504684-022	ES2504684-023	ES2504684-024	ES2504684-025	
				Result	Result	Result	Result	Result	
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<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	<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	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<0.01	0.03	5.87	<0.01	0.22	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	0.03	4.27	<0.01	0.18	
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	0.03	5.38	<0.01	0.22	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	100	100	103	95.3	101	
13C8-PFOA	----	0.02	%	92.0	90.6	91.9	87.4	88.6	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_MW004_250213	0026_MW016_250212	0026_MW009_250212	0026_MW008_250212	0026_MW039_250211
Sampling date / time				13-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	11-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-026	ES2504684-027	ES2504684-028	ES2504684-029	ES2504684-030	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	8.60	0.65	<0.02	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	7.15	0.65	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	46.5	6.78	<0.01	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	4.41	0.29	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	94.5	2.44	0.05	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	3.4	<0.1	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	4.66	0.22	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	23.1	1.45	<0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	4.16	0.19	<0.02	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	7.60	0.25	<0.01	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.11	<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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_MW004_250213	0026_MW016_250212	0026_MW009_250212	0026_MW008_250212	0026_MW039_250211
Sampling date / time				13-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	11-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-026	ES2504684-027	ES2504684-028	ES2504684-029	ES2504684-030	ES2504684-030
				Result	Result	Result	Result	Result	Result
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	<b>0.16</b>	<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	<b>0.07</b>	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	<b>209</b>	<b>13.2</b>	<b>0.05</b>	<b>0.05</b>
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	<b>141</b>	<b>9.22</b>	<b>0.05</b>	<b>0.05</b>
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	<b>193</b>	<b>12.0</b>	<b>0.05</b>	<b>0.05</b>
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	<b>96.6</b>	<b>96.1</b>	<b>98.9</b>	<b>100</b>	<b>93.2</b>	<b>93.2</b>
13C8-PFOA	----	0.02	%	<b>88.5</b>	<b>89.7</b>	<b>93.0</b>	<b>91.0</b>	<b>91.6</b>	<b>91.6</b>



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_MW024_250211	0026_MW005_250212	0026_MW012_250212	0026_MW038_250212	0026_MW006_250212
Sampling date / time				11-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-031	ES2504684-032	ES2504684-033	ES2504684-034	ES2504684-035	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.81	<0.02	0.03	0.34	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.74	<0.02	<0.02	0.42	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.11	5.55	0.04	0.02	4.61	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.31	<0.02	<0.02	0.21	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.45	7.71	0.06	0.04	6.79	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
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	<0.02	0.34	<0.02	0.04	0.22	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.02	1.43	<0.02	0.08	0.82	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.19	<0.02	<0.02	0.10	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.01	0.43	<0.01	<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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_MW024_250211	0026_MW005_250212	0026_MW012_250212	0026_MW038_250212	0026_MW006_250212
Sampling date / time				11-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-031	ES2504684-032	ES2504684-033	ES2504684-034	ES2504684-035	
				Result	Result	Result	Result	Result	
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<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	<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	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<b>0.59</b>	<b>18.1</b>	<b>0.10</b>	<b>0.21</b>	<b>14.0</b>	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<b>0.56</b>	<b>13.3</b>	<b>0.10</b>	<b>0.06</b>	<b>11.4</b>	
Sum of PFAS (WA DER List)	----	0.01	µg/L	<b>0.59</b>	<b>16.7</b>	<b>0.10</b>	<b>0.21</b>	<b>13.2</b>	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	<b>93.9</b>	<b>98.2</b>	<b>101</b>	<b>98.1</b>	<b>102</b>	
13C8-PFOA	----	0.02	%	<b>90.8</b>	<b>90.5</b>	<b>87.8</b>	<b>88.5</b>	<b>93.7</b>	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_MW003_250212	0026_MW018_250213	0026_MW045_250212	0026_MW015_250212	0026_MW104_250212
Sampling date / time				12-Feb-2025 00:00	13-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-036	ES2504684-037	ES2504684-038	ES2504684-039	ES2504684-040	ES2504684-040
				Result	Result	Result	Result	Result	Result
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	3.47	10.3	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	3.23	11.6	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.14	22.3	82.5	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	0.70	3.87	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.02	0.06	3.35	72.2	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	0.2	1.6	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.03	<0.02	0.36	2.94	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.02	<0.02	2.12	14.7	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	0.31	2.71	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	0.48	5.78	
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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_MW003_250212	0026_MW018_250213	0026_MW045_250212	0026_MW015_250212	0026_MW104_250212
Sampling date / time					12-Feb-2025 00:00	13-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-036	ES2504684-037	ES2504684-038	ES2504684-039	ES2504684-040	ES2504684-040
				Result	Result	Result	Result	Result	Result
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<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	<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	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<0.01	0.07	0.20	38.5	214	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	0.02	0.20	25.6	155	
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	0.07	0.20	32.6	193	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	100	100	102	98.7	89.0	
13C8-PFOA	----	0.02	%	88.1	90.2	90.4	93.2	90.1	



## Analytical Results

Sub-Matrix: WATER  
 (Matrix: WATER)

Sample ID

				0026_MW017_250212	0026_MW012P_25021 2	0026_MW009P_25021 2	0026_MW117_250212	0026_MW031_250211
Sampling date / time				12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	11-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-041	ES2504684-042	ES2504684-043	ES2504684-044	ES2504684-045
				Result	Result	Result	Result	Result
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.42	<0.02	4.66	0.07	0.11
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.77	<0.02	4.57	0.07	0.07
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	15.6	0.01	40.2	0.57	0.07
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.45	<0.02	3.14	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	4.21	0.10	173	0.43	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.62	<0.02	<0.02
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.4	<0.1	3.5	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.52	<0.02	5.31	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	2.37	<0.02	27.4	0.11	0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.38	<0.02	4.11	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.49	<0.01	7.04	0.02	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.53	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.44	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.07	<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
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.23	<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

				0026_MW017_250212	0026_MW012P_25021 2	0026_MW009P_25021 2	0026_MW117_250212	0026_MW031_250211
Sampling date / time				12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	12-Feb-2025 00:00	11-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-041	ES2504684-042	ES2504684-043	ES2504684-044	ES2504684-045
				Result	Result	Result	Result	Result
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>								
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
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
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	<b>0.49</b>	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	<b>1.35</b>	<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
<b>EP231P: PFAS Sums</b>								
Sum of PFAS	----	0.01	µg/L	<b>28.2</b>	<b>0.11</b>	<b>282</b>	<b>1.29</b>	<b>0.31</b>
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<b>19.8</b>	<b>0.11</b>	<b>213</b>	<b>1.00</b>	<b>0.07</b>
Sum of PFAS (WA DER List)	----	0.01	µg/L	<b>25.4</b>	<b>0.11</b>	<b>267</b>	<b>1.20</b>	<b>0.20</b>
<b>EP231S: PFAS Surrogate</b>								
13C4-PFOS	----	0.02	%	<b>99.6</b>	<b>98.3</b>	<b>87.2</b>	<b>101</b>	<b>96.4</b>
13C8-PFOA	----	0.02	%	<b>92.7</b>	<b>95.7</b>	<b>94.6</b>	<b>95.3</b>	<b>96.0</b>



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_MW029_250212	0026_QC100_250211	0026_QC101_250212	0026_QC102_250213	0026_QC103_250213
Sampling date / time				12-Feb-2025 00:00	11-Feb-2025 00:00	12-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00	
Compound	CAS Number	LOR	Unit	ES2504684-046	ES2504684-047	ES2504684-048	ES2504684-049	ES2504684-050	
				Result	Result	Result	Result	Result	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.48	<0.02	1.00	<0.02	<0.02	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.39	<0.02	1.22	<0.02	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.94	<0.01	10.4	0.04	<0.01	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.02	<0.02	0.47	<0.02	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.62	<0.01	3.59	0.06	<0.01	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
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	0.18	<0.02	0.33	<0.02	0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.86	<0.02	2.33	<0.02	0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.09	<0.02	0.32	<0.02	<0.02	
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.06	<0.01	0.39	<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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
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	0026_MW029_250212	0026_QC100_250211	0026_QC101_250212	0026_QC102_250213	0026_QC103_250213
Sampling date / time					12-Feb-2025 00:00	11-Feb-2025 00:00	12-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-046	ES2504684-047	ES2504684-048	ES2504684-049	ES2504684-050	
				Result	Result	Result	Result	Result	
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<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	<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	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<b>3.86</b>	<0.01	<b>20.5</b>	<b>0.10</b>	<b>0.04</b>	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<b>1.56</b>	<0.01	<b>14.0</b>	<b>0.10</b>	<0.01	
Sum of PFAS (WA DER List)	----	0.01	µg/L	<b>3.23</b>	<0.01	<b>18.5</b>	<b>0.10</b>	<b>0.04</b>	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	<b>95.8</b>	<b>95.0</b>	<b>97.0</b>	<b>96.2</b>	<b>97.5</b>	
13C8-PFOA	----	0.02	%	<b>92.4</b>	<b>91.8</b>	<b>95.3</b>	<b>92.8</b>	<b>90.2</b>	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0026_QC104_250213	0026_QC300_250211	0026_QC301_250213	0026_QC302_250213	0026_QC500_250213
Sampling date / time					13-Feb-2025 00:00	11-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00	13-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504684-051	ES2504684-052	ES2504684-053	ES2504684-054	ES2504684-055	ES2504684-055
				Result	Result	Result	Result	Result	Result
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<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	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<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	<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	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
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	<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	<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	<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	<0.05
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	11.2	<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	8.25	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L	9.99	<0.01	<0.01	<0.01	<0.01	<0.01
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	102	96.6	97.4	104	95.0	95.0
13C8-PFOA	----	0.02	%	88.1	91.3	95.5	96.6	95.9	95.9



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Sample ID		0026_QC501_250213	----	----	----	----
		Sampling date / time		13-Feb-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2504684-056	-----	-----	-----	-----
				Result	---	---	---	---
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
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	----	----	----	----
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
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	----	----	----	----
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
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	0026_QC501_250213		----	----	----	----
		Sampling date / time	13-Feb-2025 00:00		----	----	----	----
Compound	CAS Number	LOR	Unit	ES2504684-056	-----	-----	-----	-----
				Result	----	----	----	----
<b>EP231C: Perfluoroalkyl Sulfonamides - Continued</b>								
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	----	----	----	----
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
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	----	----	----	----
<b>EP231P: PFAS Sums</b>								
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	----	----	----	----
<b>EP231S: PFAS Surrogate</b>								
13C4-PFOS	----	0.02	%	<b>96.6</b>	----	----	----	----
13C8-PFOA	----	0.02	%	<b>95.3</b>	----	----	----	----



### Surrogate Control Limits

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



## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2504684	Page	: 1 of 9
Client	: GHD PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MS HELEN MILNE	Telephone	: +61-2-8784 8555
Project	: ACT_0026_PFASOMP_25	Date Samples Received	: 18-Feb-2025
Site	: ----	Issue Date	: 25-Feb-2025
Sampler	: Jarrad Mawbey	No. of samples received	: 56
Order number	: 12626622	No. of samples analysed	: 56

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.





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		
<b>EP231A: Perfluoroalkyl Sulfonic Acids - Continued</b>									
0026_SW006_250212, 0026_SW018_250212, 0026_SW049_250212, 0026_SW007_250212, 0026_SW009_250212, 0026_MW002_250212, 0026_MW009_250212, 0026_MW005_250212, 0026_MW038_250212, 0026_MW003_250212, 0026_MW015_250212,	0026_SW124_250212, 0026_SW008_250212, 0026_SW012_250212, 0026_SW106_250212, 0026_MW001_250212, 0026_MW016_250212, 0026_MW008_250212, 0026_MW012_250212, 0026_MW006_250212, 0026_MW045_250212, 0026_MW104_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✓	24-Feb-2025	11-Aug-2025	✓	
<b>HDPE (no PTFE) (EP231X)</b>									
0026_QC102_250213, 0026_QC104_250213, 0026_QC302_250213, 0026_QC501_250213	0026_QC103_250213, 0026_QC301_250213, 0026_QC500_250213,	13-Feb-2025	20-Feb-2025	12-Aug-2025	✓	21-Feb-2025	12-Aug-2025	✓	
<b>HDPE (no PTFE) (EP231X)</b>									
0026_SW013_250213, 0026_SW065_250213, 0026_MW073_250213, 0026_MW072_250213, 0026_MW004_250213,	0026_SW014_250213, 0026_MW213_250213, 0026_MW026_250213, 0026_MW044_250213, 0026_MW018_250213	13-Feb-2025	20-Feb-2025	12-Aug-2025	✓	24-Feb-2025	12-Aug-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	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW031_250211, 0026_QC300_250211	0026_QC100_250211,	11-Feb-2025	20-Feb-2025	10-Aug-2025	✔	21-Feb-2025	10-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW001_250211, 0026_SW020_250211, 0026_SW005_250211, 0026_MW039_250211,	0026_SW004B_250211, 0026_SW123_250211, 0026_SW002_250211, 0026_MW024_250211	11-Feb-2025	20-Feb-2025	10-Aug-2025	✔	24-Feb-2025	10-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW017_250212, 0026_MW009P_250212, 0026_MW029_250212,	0026_MW012P_250212, 0026_MW117_250212, 0026_QC101_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✔	21-Feb-2025	11-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW006_250212, 0026_SW018_250212, 0026_SW049_250212, 0026_SW007_250212, 0026_SW009_250212, 0026_MW002_250212, 0026_MW009_250212, 0026_MW005_250212, 0026_MW038_250212, 0026_MW003_250212, 0026_MW015_250212,	0026_SW124_250212, 0026_SW008_250212, 0026_SW012_250212, 0026_SW106_250212, 0026_MW001_250212, 0026_MW016_250212, 0026_MW008_250212, 0026_MW012_250212, 0026_MW006_250212, 0026_MW045_250212, 0026_MW104_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✔	24-Feb-2025	11-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_QC102_250213, 0026_QC104_250213, 0026_QC302_250213, 0026_QC501_250213	0026_QC103_250213, 0026_QC301_250213, 0026_QC500_250213,	13-Feb-2025	20-Feb-2025	12-Aug-2025	✔	21-Feb-2025	12-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW013_250213, 0026_SW065_250213, 0026_MW073_250213, 0026_MW072_250213, 0026_MW004_250213,	0026_SW014_250213, 0026_MW213_250213, 0026_MW026_250213, 0026_MW044_250213, 0026_MW018_250213	13-Feb-2025	20-Feb-2025	12-Aug-2025	✔	24-Feb-2025	12-Aug-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	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW031_250211, 0026_QC300_250211	0026_QC100_250211,	11-Feb-2025	20-Feb-2025	10-Aug-2025	✔	21-Feb-2025	10-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW001_250211, 0026_SW020_250211, 0026_SW005_250211, 0026_MW039_250211,	0026_SW004B_250211, 0026_SW123_250211, 0026_SW002_250211, 0026_MW024_250211	11-Feb-2025	20-Feb-2025	10-Aug-2025	✔	24-Feb-2025	10-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW017_250212, 0026_MW009P_250212, 0026_MW029_250212,	0026_MW012P_250212, 0026_MW117_250212, 0026_QC101_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✔	21-Feb-2025	11-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW006_250212, 0026_SW018_250212, 0026_SW049_250212, 0026_SW007_250212, 0026_SW009_250212, 0026_MW002_250212, 0026_MW009_250212, 0026_MW005_250212, 0026_MW038_250212, 0026_MW003_250212, 0026_MW015_250212,	0026_SW124_250212, 0026_SW008_250212, 0026_SW012_250212, 0026_SW106_250212, 0026_MW001_250212, 0026_MW016_250212, 0026_MW008_250212, 0026_MW012_250212, 0026_MW006_250212, 0026_MW045_250212, 0026_MW104_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✔	24-Feb-2025	11-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_QC102_250213, 0026_QC104_250213, 0026_QC302_250213, 0026_QC501_250213	0026_QC103_250213, 0026_QC301_250213, 0026_QC500_250213,	13-Feb-2025	20-Feb-2025	12-Aug-2025	✔	21-Feb-2025	12-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW013_250213, 0026_SW065_250213, 0026_MW073_250213, 0026_MW072_250213, 0026_MW004_250213,	0026_SW014_250213, 0026_MW213_250213, 0026_MW026_250213, 0026_MW044_250213, 0026_MW018_250213	13-Feb-2025	20-Feb-2025	12-Aug-2025	✔	24-Feb-2025	12-Aug-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	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW031_250211, 0026_QC300_250211	0026_QC100_250211,	11-Feb-2025	20-Feb-2025	10-Aug-2025	✔	21-Feb-2025	10-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW001_250211, 0026_SW020_250211, 0026_SW005_250211, 0026_MW039_250211,	0026_SW004B_250211, 0026_SW123_250211, 0026_SW002_250211, 0026_MW024_250211	11-Feb-2025	20-Feb-2025	10-Aug-2025	✔	24-Feb-2025	10-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW017_250212, 0026_MW009P_250212, 0026_MW029_250212,	0026_MW012P_250212, 0026_MW117_250212, 0026_QC101_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✔	21-Feb-2025	11-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW006_250212, 0026_SW018_250212, 0026_SW049_250212, 0026_SW007_250212, 0026_SW009_250212, 0026_MW002_250212, 0026_MW009_250212, 0026_MW005_250212, 0026_MW038_250212, 0026_MW003_250212, 0026_MW015_250212,	0026_SW124_250212, 0026_SW008_250212, 0026_SW012_250212, 0026_SW106_250212, 0026_MW001_250212, 0026_MW016_250212, 0026_MW008_250212, 0026_MW012_250212, 0026_MW006_250212, 0026_MW045_250212, 0026_MW104_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✔	24-Feb-2025	11-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_QC102_250213, 0026_QC104_250213, 0026_QC302_250213, 0026_QC501_250213	0026_QC103_250213, 0026_QC301_250213, 0026_QC500_250213,	13-Feb-2025	20-Feb-2025	12-Aug-2025	✔	21-Feb-2025	12-Aug-2025	✔
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW013_250213, 0026_SW065_250213, 0026_MW073_250213, 0026_MW072_250213, 0026_MW004_250213,	0026_SW014_250213, 0026_MW213_250213, 0026_MW026_250213, 0026_MW044_250213, 0026_MW018_250213	13-Feb-2025	20-Feb-2025	12-Aug-2025	✔	24-Feb-2025	12-Aug-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	
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW031_250211, 0026_QC300_250211	0026_QC100_250211,	11-Feb-2025	20-Feb-2025	10-Aug-2025	✓	21-Feb-2025	10-Aug-2025	✓
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW001_250211, 0026_SW020_250211, 0026_SW005_250211, 0026_MW039_250211,	0026_SW004B_250211, 0026_SW123_250211, 0026_SW002_250211, 0026_MW024_250211	11-Feb-2025	20-Feb-2025	10-Aug-2025	✓	24-Feb-2025	10-Aug-2025	✓
<b>HDPE (no PTFE) (EP231X)</b> 0026_MW017_250212, 0026_MW009P_250212, 0026_MW029_250212,	0026_MW012P_250212, 0026_MW117_250212, 0026_QC101_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✓	21-Feb-2025	11-Aug-2025	✓
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW006_250212, 0026_SW018_250212, 0026_SW049_250212, 0026_SW007_250212, 0026_SW009_250212, 0026_MW002_250212, 0026_MW009_250212, 0026_MW005_250212, 0026_MW038_250212, 0026_MW003_250212, 0026_MW015_250212,	0026_SW124_250212, 0026_SW008_250212, 0026_SW012_250212, 0026_SW106_250212, 0026_MW001_250212, 0026_MW016_250212, 0026_MW008_250212, 0026_MW012_250212, 0026_MW006_250212, 0026_MW045_250212, 0026_MW104_250212	12-Feb-2025	20-Feb-2025	11-Aug-2025	✓	24-Feb-2025	11-Aug-2025	✓
<b>HDPE (no PTFE) (EP231X)</b> 0026_QC102_250213, 0026_QC104_250213, 0026_QC302_250213, 0026_QC501_250213	0026_QC103_250213, 0026_QC301_250213, 0026_QC500_250213,	13-Feb-2025	20-Feb-2025	12-Aug-2025	✓	21-Feb-2025	12-Aug-2025	✓
<b>HDPE (no PTFE) (EP231X)</b> 0026_SW013_250213, 0026_SW065_250213, 0026_MW073_250213, 0026_MW072_250213, 0026_MW004_250213,	0026_SW014_250213, 0026_MW213_250213, 0026_MW026_250213, 0026_MW044_250213, 0026_MW018_250213	13-Feb-2025	20-Feb-2025	12-Aug-2025	✓	24-Feb-2025	12-Aug-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	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	57	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	57	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	57	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	57	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.

<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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	: <b>ES2504684</b>	Page	: 1 of 6
Client	: <b>GHD PTY LTD</b>	Laboratory	: Environmental Division Sydney
Contact	: MS HELEN MILNE	Contact	: Samiksha Sathish
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: ACT_0026_PFASOMP_25	Date Samples Received	: 18-Feb-2025
Order number	: 12626622	Date Analysis Commenced	: 19-Feb-2025
C-O-C number	: ----	Issue Date	: 25-Feb-2025
Sampler	: Jarrad Mawbey		
Site	: ----		
Quote number	: ES23GHDSE0026		
No. of samples received	: 56		
No. of samples analysed	: 56		



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
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW



## General Comments

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

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

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

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

## 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: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6387058)</b>								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	87.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	82.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	85.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	91.0	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	87.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	90.3	53.0	142
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6387060)</b>								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	90.3	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	87.6	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	87.7	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	104	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	96.2	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	93.4	53.0	142
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6387061)</b>								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	89.5	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	111	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	95.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	98.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	95.2	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	104	53.0	142
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6387058)</b>								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.9	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	92.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	90.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	90.6	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	94.1	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.1	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	101	72.0	134



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
					LCS	Low	High	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6387058) - continued</b>								
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	91.4	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	106	71.0	132
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6387060)</b>								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	99.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	97.1	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.5	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	97.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	101	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	108	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	89.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	105	71.0	132
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6387061)</b>								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	103	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	95.1	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	98.1	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	91.5	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	96.5	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	113	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	120	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	121	71.0	132
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6387058)</b>								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	92.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	91.5	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	82.2	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	86.5	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.0	57.6	145



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 High	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6387058) - continued</b>											
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)				2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	108	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)				2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.5	61.0	135
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6387060)</b>											
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	97.7	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)				4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	88.7	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)				24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	77.0	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)				1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.3	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)				2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	96.3	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
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6387061)</b>											
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	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)				4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	102	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)				24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	77.2	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)				1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	97.6	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)				2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)				2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	90.3	61.0	135
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6387058)</b>											
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)				757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	80.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)				27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	95.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)				39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	94.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)				120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	85.1	71.4	144
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6387060)</b>											
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)				757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	90.5	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)				27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	137	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)				39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	89.3	67.0	138



Sub-Matrix: WATER

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
					Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit					LCS	Low
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6387060) - continued</b>									
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	74.5	71.4	144	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6387061)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	87.5	63.0	143	
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	78.9	64.0	140	
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	86.4	67.0	138	
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	87.0	71.4	144	

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2504684**

Client	: GHD PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MS HELEN MILNE	Contact	: Samiksha Sathish
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: helen.milne@ghd.com	E-mail	: samiksha.sathish@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: ACT_0026_PFASOMP_25	Page	: 1 of 4
Order number	: 12626622	Quote number	: ES2023GHDSE0026 (ES23GHDSE0026)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Jarrad Mawbey		

### Dates

Date Samples Received	: 18-Feb-2025 11:30	Issue Date	: 19-Feb-2025
Client Requested Due Date	: 25-Feb-2025	Scheduled Reporting Date	: <b>25-Feb-2025</b>

### Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 5.8°C, 6.3°C, 6.4°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 56 / 56

### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Samples '0026\_QC200\_250211', '0026\_QC201\_250212', '0026\_QC202\_250213', '0026\_QC203\_250213' and '0026\_QC204\_250213' forwarded to Eurofins.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



## Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exists.

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: WATER

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (31 analytes)
ES2504684-001	13-Feb-2025 00:00	0026_SW013_250213	✓
ES2504684-002	13-Feb-2025 00:00	0026_SW014_250213	✓
ES2504684-003	13-Feb-2025 00:00	0026_SW065_250213	✓
ES2504684-004	11-Feb-2025 00:00	0026_SW001_250211	✓
ES2504684-005	12-Feb-2025 00:00	0026_SW006_250212	✓
ES2504684-006	12-Feb-2025 00:00	0026_SW124_250212	✓
ES2504684-007	12-Feb-2025 00:00	0026_SW018_250212	✓
ES2504684-008	12-Feb-2025 00:00	0026_SW008_250212	✓
ES2504684-009	11-Feb-2025 00:00	0026_SW004B_250211	✓
ES2504684-010	11-Feb-2025 00:00	0026_SW020_250211	✓
ES2504684-011	12-Feb-2025 00:00	0026_SW049_250212	✓
ES2504684-012	12-Feb-2025 00:00	0026_SW012_250212	✓
ES2504684-013	12-Feb-2025 00:00	0026_SW007_250212	✓
ES2504684-014	12-Feb-2025 00:00	0026_SW106_250212	✓
ES2504684-015	12-Feb-2025 00:00	0026_SW009_250212	✓
ES2504684-016	11-Feb-2025 00:00	0026_SW123_250211	✓
ES2504684-017	11-Feb-2025 00:00	0026_SW005_250211	✓
ES2504684-018	11-Feb-2025 00:00	0026_SW002_250211	✓
ES2504684-019	12-Feb-2025 00:00	0026_MW001_250212	✓
ES2504684-020	13-Feb-2025 00:00	0026_MW213_250213	✓
ES2504684-021	13-Feb-2025 00:00	0026_MW073_250213	✓
ES2504684-022	12-Feb-2025 00:00	0026_MW002_250212	✓
ES2504684-023	13-Feb-2025 00:00	0026_MW026_250213	✓
ES2504684-024	13-Feb-2025 00:00	0026_MW072_250213	✓
ES2504684-025	13-Feb-2025 00:00	0026_MW044_250213	✓
ES2504684-026	13-Feb-2025 00:00	0026_MW004_250213	✓
ES2504684-027	12-Feb-2025 00:00	0026_MW016_250212	✓
ES2504684-028	12-Feb-2025 00:00	0026_MW009_250212	✓
ES2504684-029	12-Feb-2025 00:00	0026_MW008_250212	✓
ES2504684-030	11-Feb-2025 00:00	0026_MW039_250211	✓
ES2504684-031	11-Feb-2025 00:00	0026_MW024_250211	✓
ES2504684-032	12-Feb-2025 00:00	0026_MW005_250212	✓
ES2504684-033	12-Feb-2025 00:00	0026_MW012_250212	✓
ES2504684-034	12-Feb-2025 00:00	0026_MW038_250212	✓
ES2504684-035	12-Feb-2025 00:00	0026_MW006_250212	✓



			WATER - EP231X PFAS - Full Suite (31 analytes)
ES2504684-036	12-Feb-2025 00:00	0026_MW003_250212	✓
ES2504684-037	13-Feb-2025 00:00	0026_MW018_250213	✓
ES2504684-038	12-Feb-2025 00:00	0026_MW045_250212	✓
ES2504684-039	12-Feb-2025 00:00	0026_MW015_250212	✓
ES2504684-040	12-Feb-2025 00:00	0026_MW104_250212	✓
ES2504684-041	12-Feb-2025 00:00	0026_MW017_250212	✓
ES2504684-042	12-Feb-2025 00:00	0026_MW012P_250212	✓
ES2504684-043	12-Feb-2025 00:00	0026_MW009P_250212	✓
ES2504684-044	12-Feb-2025 00:00	0026_MW117_250212	✓
ES2504684-045	11-Feb-2025 00:00	0026_MW031_250211	✓
ES2504684-046	12-Feb-2025 00:00	0026_MW029_250212	✓
ES2504684-047	11-Feb-2025 00:00	0026_QC100_250211	✓
ES2504684-048	12-Feb-2025 00:00	0026_QC101_250212	✓
ES2504684-049	13-Feb-2025 00:00	0026_QC102_250213	✓
ES2504684-050	13-Feb-2025 00:00	0026_QC103_250213	✓
ES2504684-051	13-Feb-2025 00:00	0026_QC104_250213	✓
ES2504684-052	11-Feb-2025 00:00	0026_QC300_250211	✓
ES2504684-053	13-Feb-2025 00:00	0026_QC301_250213	✓
ES2504684-054	13-Feb-2025 00:00	0026_QC302_250213	✓
ES2504684-055	13-Feb-2025 00:00	0026_QC500_250213	✓
ES2504684-056	13-Feb-2025 00:00	0026_QC501_250213	✓

### 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 accountspayableAU@ghd.com

### ALICE WALKER

- \*AU Certificate of Analysis - NATA (COA) Email alice.walker@ghd.com  
 - \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email alice.walker@ghd.com  
 - \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email alice.walker@ghd.com  
 - A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email alice.walker@ghd.com  
 - Chain of Custody (CoC) (COC) Email alice.walker@ghd.com  
 - EDI Format - ESDAT (ESDAT) Email alice.walker@ghd.com  
 - Electronic SRN for ESdat (ESRN\_ESDAT) Email alice.walker@ghd.com

### DAVE HAGER

- \*AU Certificate of Analysis - NATA (COA) Email dave.hager@ghd.com  
 - \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email dave.hager@ghd.com  
 - \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email dave.hager@ghd.com  
 - A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email dave.hager@ghd.com  
 - A4 - AU Tax Invoice (INV) Email dave.hager@ghd.com  
 - Chain of Custody (CoC) (COC) Email dave.hager@ghd.com  
 - EDI Format - ESDAT (ESDAT) Email dave.hager@ghd.com  
 - Electronic SRN for ESdat (ESRN\_ESDAT) Email dave.hager@ghd.com

### GHD LAB REPORTS

- \*AU Certificate of Analysis - NATA (COA) Email ghdlabreports@ghd.com  
 - \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email ghdlabreports@ghd.com  
 - \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email ghdlabreports@ghd.com  
 - A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email ghdlabreports@ghd.com  
 - Chain of Custody (CoC) (COC) Email ghdlabreports@ghd.com  
 - EDI Format - ESDAT (ESDAT) Email ghdlabreports@ghd.com  
 - Electronic SRN for ESdat (ESRN\_ESDAT) Email ghdlabreports@ghd.com

### HELEN MILNE

- \*AU Certificate of Analysis - NATA (COA) Email helen.milne@ghd.com  
 - \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email helen.milne@ghd.com  
 - \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email helen.milne@ghd.com  
 - A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email helen.milne@ghd.com  
 - A4 - AU Tax Invoice (INV) Email helen.milne@ghd.com  
 - Chain of Custody (CoC) (COC) Email helen.milne@ghd.com  
 - EDI Format - ESDAT (ESDAT) Email helen.milne@ghd.com  
 - Electronic SRN for ESdat (ESRN\_ESDAT) Email helen.milne@ghd.com

### Jarrad Mawbey

- \*AU Certificate of Analysis - NATA (COA) Email Jarrad.Mawbey@ghd.com  
 - \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email Jarrad.Mawbey@ghd.com  
 - \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email Jarrad.Mawbey@ghd.com  
 - A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email Jarrad.Mawbey@ghd.com  
 - Chain of Custody (CoC) (COC) Email Jarrad.Mawbey@ghd.com  
 - EDI Format - ESDAT (ESDAT) Email Jarrad.Mawbey@ghd.com  
 - Electronic SRN for ESdat (ESRN\_ESDAT) Email Jarrad.Mawbey@ghd.com



# CHAIN OF CUSTODY

ALS Laboratory  
please tick →

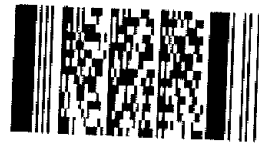
CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENT <input type="checkbox"/> Standard TAT (List due date):	STANDARD TAT	FOR LABORATORY USE ONLY (Circle)		
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) <input type="checkbox"/> Non Standard or urgent TAT (List due date):		Custody Seal Intact? Yes No N/A		
PROJECT: ACT 0026_PFA5OMP_25	ALS QUOTE NO.: ES23GHDSE0026	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present Upon receipt? Yes No N/A		
ORDER NUMBER: 12626622		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt		
PROJECT MANAGER: Helen Milne / Dave Hager	CONTACT PH: 0400 642 953	OF: 1 2 3 4 5 6 7	Other comment:		
SAMPLER: Jarrad Mawbey	SAMPLER MOBILE: 0411 379 023	RELINQUISHED BY: J Mawbey	RECEIVED BY: <i>[Signature]</i>	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? ( YES / NO)	EDD FORMAT (or default):	DATE/TIME: 17/02/2024	DATE/TIME: 17/02/2024 11:30	DATE/TIME:	DATE/TIME:
Email Reports to jarrad.mawbey@ghd.com helen.milne@ghd.com dave.hager@ghd.com Alice.Walker@ghd.com ghdlabreports@ghd.com					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)															
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	PEAS Full Suite (EP231X)															
1	0026_SW013_250213	13/2/2025	W	Ice	2	X															
2	0026_SW014_250213	13/2/2025	W	Ice	2	X															
3	0026_SW065_250213	13/2/2025	W	Ice	2	X															
4	0026_SW001_250211	2/11/2025	W	Ice	2	X															
5	0026_SW006_250212	2/12/2025	W	Ice	2	X															
6	0026_SW124_250212	2/12/2025	W	Ice	2	X															
7	0026_SW018_250212	2/12/2025	W	Ice	2	X															
8	0026_SW008_250212	2/12/2025	W	Ice	2	X															
9	0026_SW004B_250211	2/11/2025	W	Ice	2	X															
10	0026_SW020_250211	2/11/2025	W	Ice	2	X															
11	0026_SW040_250212	2/12/2025	W	Ice	2	X															
12	0026_SW012_250212	2/12/2025	W	Ice	2	X															
13	0026_SW007_250212	2/12/2025	W	Ice	2	X															
14	0026_SW106_250212	2/12/2025	W	Ice	2	X															
15	0026_SW009_250212	2/12/2025	W	Ice	2	X															
16	0026_SW123_250211	2/11/2025	W	Ice	2	X															
17	0026_SW005_250211	2/11/2025	W	Ice	2	X															

Subcontract Forwarded to **Envirofence**  
 Lab / Analysts  
 Organised by  
 Relinquished by  
 Comments: Correct  
 WO No: **ES2504684**  
 Attached By PO: Internal Staff

Environmental Division  
 Sydney  
 Work Order Reference  
**ES2504684**



Telephone: +61-2-8784 8555







**CHAIN OF CUSTODY RECORD**

CLIENT DETAILS		Page ___ 1 ___ of ___ 1 ___																																																																																																																																																																																																																																																																																																																																																																																																				
Company Name : GHD Pty Ltd, Sydney		Contact Name : Jarrad Mawboy 0411 370 023	Purchase Order : 12626622																																																																																																																																																																																																																																																																																																																																																																																																			
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000		Project Manager : Dave Hager	PROJECT Number : 12626622																																																																																																																																																																																																																																																																																																																																																																																																			
Email for results : dave.hager@ghd.com, dsdat@ghd.au, dsdat@ghd.com, dsdat@ghd.com		PROJECT Name : ACI_0021_PFA5MGMT_25	Eurofins   mgt quote ID :																																																																																																																																																																																																																																																																																																																																																																																																			
Special Directions & Comments :  <b>Forwarded from ALS</b>  <b>*K Match ALS standard LORs</b>  Eurofins   mgt DI water batch number:		Analytes	Some common holding times (with correct preservation). For further information contact the lab																																																																																																																																																																																																																																																																																																																																																																																																			
PFAS Extended Suite - 30 PFAS			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th align="center" colspan="4">Waters</th> <th align="center" colspan="4">Soils</th> </tr> <tr> <td>BTEX, MAH, VOC</td> <td>14 days</td> <td>BTEX, MAH, VOC</td> <td>14 days</td> </tr> <tr> <td>TRH, PAH, Phenols, Pesticides</td> <td>7 days</td> <td>TRH, PAH, Phenols, Pesticides</td> <td>14 days</td> </tr> <tr> <td>Heavy Metals</td> <td>6 months</td> <td>Heavy Metals</td> <td>6 months</td> </tr> <tr> <td>Mercury, CrVI</td> <td>28 days</td> <td>Mercury, CrVI</td> <td>28 days</td> </tr> <tr> <td>Microbiological testing</td> <td>24 hours</td> <td>Microbiological testing</td> <td>72 hours</td> </tr> <tr> <td>BOD, Nitrate, Nitrite, Total N</td> <td>2 days</td> <td>Anions</td> <td>28 days</td> </tr> <tr> <td>Solids - TSS, TDS etc</td> <td>7 days</td> <td>SPOCAS, pH Field and FOX, CrS</td> <td>24 hours</td> </tr> <tr> <td>Ferrous iron</td> <td>7 days</td> <td>ASLP, TCLP</td> <td>7 days</td> </tr> </table>	Waters				Soils				BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days	TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days	Heavy Metals	6 months	Heavy Metals	6 months	Mercury, CrVI	28 days	Mercury, CrVI	28 days	Microbiological testing	24 hours	Microbiological testing	72 hours	BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days	Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours	Ferrous iron	7 days	ASLP, TCLP	7 days																																																																																																																																																																																																																																																																																																																																																											
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# Appendix F

Field notes



# Purging and Sampling Record

Well ID: 0026\_MW001

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 1.285 m bTOC	Time SWL Measured: 12:47 PM	Well Depth: 9.980 m bTOC	Logic Check: Yes
Project: Shoalhaven LC	Sample Method: Hydrasleeve	NAPL Check: Absent	Well Cap Secure? Yes	NAPL Depth: - m bTOC	Gatic or Stick Up? Gatic
Proj. No.: 12626622	Sample Depth: 6.5 m bTOC	Screened Interval From: _____ to _____ m bTOC	Stick Up: - m	WQuality Meter Type: YSI	
Site: 0026 - ALB	Flow Cell Used? No			WLevel Meter Type: Interface Probe	
Sampler: LR	Field Filtered? No				
Date: 13/02/2025					
Round: February 2025					

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
12:51	1.0	22.0	6.84	5228.0	0.77	522.1	-	clear, no odour or sheen, some brown sediment in bottom of sleeve.

Field QA Checks:	Purge Volumes
Air bubbles in vials or violent reactions? No	Casing Int. Dia (mm) 50 100 150
Decontamination as per GHD procedure? Yes	Vol (L/m of casing) 2.0 7.9 17.7
Was sampling equipment pre-cleaned? Yes	
COC updated? Yes	

**Comment:** \_\_\_\_\_

Sample Summary	Samples collected?	Duplicate collected?	Duplicate 1 ID:
	Yes	No	_____
#Primary sample containers	2	Duplicate analysis:	Duplicate 2 ID: _____



# Purging and Sampling Record

Well ID: 0026\_MW002

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 1.330 m bTOC	Time SWL Measured: 12:33 PM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 9.600 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 4 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC	Gatic or Stick Up? Gatic		
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 13/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm	Stick Up: - m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
12:35	1.0	22.0	6.57	2751.0	2.25	565.0	-	Clear, no odour or sheen, no turbidity.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** .....

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

**Well ID: 0026\_MW003**

Job Information		Sampling Information		Monitoring Well Information	
<b>Client:</b> Defence		<b>Purge Method:</b> No purge		<b>SWL:</b> 13.775 m bTOC	<b>Time SWL Measured:</b> 09:25 AM
<b>Project:</b> Shoalhaven LC		<b>Sample Method:</b> Hydrasleeve		<b>Well Depth:</b> 22.200 m bTOC	<b>Logic Check:</b> Yes
<b>Proj. No.:</b> 12626622		<b>Sample Depth:</b> 18 m bTOC		<b>NAPL Check:</b> Absent	<b>Well Cap Secure?</b> Yes
<b>Site:</b> 0026 - ALB		<b>WQuality Meter Type:</b> YSI		<b>NAPL Depth:</b> - m bTOC	<b>Gatic or Stick Up?</b> Stick Up
<b>Sampler:</b> LR		<b>Flow Cell Used?</b> No		<b>Screened Interval From:</b> to m bTOC	
<b>Date:</b> 12/02/2025		<b>WLevel Meter Type:</b> Interface Probe		<b>Well Diameter:</b> 50 mm	<b>Stick Up:</b> 0.94 m
<b>Round:</b> February 2025		<b>Field Filtered?</b> No			

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
00:00	1.0	19.1	6.57	9091.0	1.03	64.5	-	Clear, non turbid, no odour, no sheen, trace particulate matter.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** Well monument OK condition, Lid hinge poor condition, rusting. TDS: 7150 mg/L. DO% 11.40

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

Well ID: 0026\_MW004

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 4.065	m bTOC	Time SWL Measured: 06:40 AM	
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 9.445	m bTOC	Logic Check: Yes	
Proj. No.: 12626622	Sample Depth: 7	NAPL Check: Absent		Well Cap Secure? Yes	
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: _____	m bTOC	Gatic or Stick Up? Gatic	
Sampler: LR JNM	Flow Cell Used? No	Screened Interval From: _____	to _____	m bTOC	
Date: 13/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50	mm	Stick Up: -0.085	m
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec. Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
06:40	1.0	18.7	7.08	2349.0	1.91	18.7	-	Clear, slightly cloudy, low turbidity, no sheen, no odour, trace sediment in base.

<b>Field QA Checks:</b> Air bubbles in vials or violent reactions? No Decontamination as per GHD procedure? Yes Was sampling equipment pre-cleaned? Yes COC updated? Yes		<b>Purge Volumes</b> Casing Int. Dia (mm) 50 100 150 Vol (L/m of casing) 2.0 7.9 17.7
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**Comment:** TDS 1735

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: _____
	#Primary sample containers 2	Duplicate analysis: _____	Duplicate 2 ID: _____



# Purging and Sampling Record

Well ID: 0026\_MW005

Job Information		Sampling Information		Monitoring Well Information	
<b>Client:</b> Defence	<b>Purge Method:</b> No purge	<b>SWL:</b> 5.335 m bTOC	<b>Time SWL Measured:</b> 10:27 AM		
<b>Project:</b> Shoalhaven LC	<b>Sample Method:</b> Hydrasleeve	<b>Well Depth:</b> 6.540 m bTOC	<b>Logic Check:</b> Yes		
<b>Proj. No.:</b> 12626622	<b>Sample Depth:</b> 6 m bTOC	<b>NAPL Check:</b> Absent	<b>Well Cap Secure?</b> Yes		
<b>Site:</b> 0026 - ALB	<b>WQuality Meter Type:</b> YSI	<b>NAPL Depth:</b> m bTOC	<b>Gatic or Stick Up?</b> Stick Up		
<b>Sampler:</b> LR	<b>Flow Cell Used?</b> No	<b>Screened Interval From:</b> to m bTOC			
<b>Date:</b> 12/02/2025	<b>WLevel Meter Type:</b> Interface Probe	<b>Well Diameter:</b> 50 mm	<b>Stick Up:</b> 0.91 m		
<b>Round:</b> February 2025	<b>Field Filtered?</b> No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec. Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
10:30	1.0	18.9	6.55	788.0	1.30	-66.9	-	Clear, non-turbid, pale brown towards base, no sheen, no odour, trace sediment.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** Logger downhill removed at 10:29. DO%: 12.2

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

**Well ID: 0026\_MW006**

Job Information		Sampling Information		Monitoring Well Information			
Client: Defence	Purge Method: No purge	SWL: 5.380	m bTOC	Time SWL Measured:	12:30 PM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 8.020	m bTOC	Logic Check:	Yes		
Proj. No.: 12626622	Sample Depth: 7.5	m bTOC		NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI			NAPL Depth: _____	m bTOC		
Sampler: LR JM	Flow Cell Used? No			Screened Interval From: _____	to _____		m bTOC
Date: 12/02/2025	WLevel Meter Type: Interface Probe			Well Diameter: 50			mm
Round: February 2025	Field Filtered? No					Stick Up:	0.835 m

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
12:30	1.0	19.6	5.85	331.3	0.97	416.5	-	Pale brown, no odour, no sheen, suspended solids, low turbidity.

<b>Field QA Checks:</b> Air bubbles in vials or violent reactions? No Decontamination as per GHD procedure? Yes Was sampling equipment pre-cleaned? Yes COC updated? Yes	<b>Purge Volumes</b> Casing Int. Dia (mm) 50 100 150 Vol (L/m of casing) 2.0 7.9 17.7
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**Comment:** DO = 10.20, TDS: 241

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: _____
	#Primary sample containers 2	Duplicate analysis: _____	Duplicate 2 ID: _____



# Purging and Sampling Record

Well ID: 0026\_MW008

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 6.925 m bTOC	Time SWL Measured: 06:58 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 9.490 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 8.75 m bTOC	NAPL Check: .....	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: ..... m bTOC	Gatic or Stick Up? Gatic		
Sampler: LR	Flow Cell Used? No	Screened Interval From: ..... to ..... m bTOC			
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: ..... mm	Stick Up: ..... m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec. Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
07:00	0.5	19.7	5.29	299.6	1.46	319.5	-	Pale brown, slightly cloudy, no odour or sheen, low turbidity.

Field QA Checks:		Purge Volumes
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm) 50 100 150 Vol (L/m of casing) 2.0 7.9 17.7
Decontamination as per GHD procedure?	Yes	
Was sampling equipment pre-cleaned?	Yes	
COC updated?	Yes	

<b>Comment:</b> .....			
<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? Yes	Duplicate 1 ID: 0026_QC101
	#Primary sample containers .....	Duplicate analysis: .....	Duplicate 2 ID: 0026_QC201



# Purging and Sampling Record

**Well ID: 0026\_MW009**

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 0.535 m bTOC	Time SWL Measured: 07:52 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 15.980 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 13 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: m bTOC	Gatic or Stick Up? Gatic		
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: mm	Stick Up: m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
07:56	1.0	19.4	6.13	415.0	0.66	48.0	-	Clear, some suspended particles, mild organic odour, no sheen.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** .....

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

Well ID: 0026\_MW009P

Job Information	Sampling Information	Monitoring Well Information
Client: Defence	Purge Method: No purge	SWL: 0.660 m bTOC
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 2.420 m bTOC
Proj. No.: 12626622	Sample Depth: 2 m bTOC	NAPL Check: Absent
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm
Round: February 2025	Field Filtered? No	Time SWL Measured: 08:07 AM
		Logic Check: Yes
		Well Cap Secure? Yes
		Gatic or Stick Up? Gatic
		Stick Up: - m

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
08:07	1.0	21.4	4.76	172.4	0.99	208.9	-	Clear, pale orange brown towards base of sleeve, no odour or sheen.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>		
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50	100
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0	7.9
Was sampling equipment pre-cleaned?	Yes			17.7
COC updated?	Yes			

**Comment:** \_\_\_\_\_

<b>Sample Summary</b>	Samples collected?	Yes	Duplicate collected?	No	Duplicate 1 ID:	_____
	#Primary sample containers	2	Duplicate analysis:	_____	Duplicate 2 ID:	_____



# Purging and Sampling Record

Well ID: 0026\_MW012

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 0.270	m bTOC	Time SWL Measured: 08:43 AM	
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 12.990	m bTOC	Logic Check: Yes	
Proj. No.: 12626622	Sample Depth: 10	NAPL Check:		Well Cap Secure? Yes	
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth:	m bTOC	Gatic or Stick Up? Gatic	
Sampler: LR	Flow Cell Used? No	Screened Interval From:	to	m bTOC	
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter:	mm	Stick Up:	m
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
<i>Stable when (3 consecutive readings):</i>		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
08:49	1.0	19.9	6.13	205.1	1.32	185.5	-	Clear, no odour or seen, slight pale yellow colour.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

<b>Comment:</b>			
<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? Yes	Duplicate 1 ID: 0026_QC102
	#Primary sample containers 2	Duplicate analysis:	Duplicate 2 ID: 0026_QC202



# Purging and Sampling Record

Well ID: 0026\_MW012P

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 0.575 m bTOC	Time SWL Measured: 08:29 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 5.300 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 4.5 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC	Gatic or Stick Up? Gatic		
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm	Stick Up: - m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
08:35	1.0	20.9	4.81	1348.0	0.84	232.8	-	Clear, no odour or sheen, orange-brown flocculation at base of sleeve.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** .....

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

Well ID: 0026\_MW015

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 2.035	m bTOC	Time SWL Measured: 01:36 PM	
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 13.300	m bTOC	Logic Check: Yes	
Proj. No.: 12626622	Sample Depth: 10	NAPL Check: Absent		Well Cap Secure? Yes	
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: -	m bTOC	Gatic or Stick Up? Gatic	
Sampler: LR	Flow Cell Used? No	Screened Interval From:	to	m bTOC	
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50	mm	Stick Up: -0.21	m
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
<i>Stable when (3 consecutive readings):</i>		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
13:36	1.0	19.4	6.22	379.1	1.39	427.0	-	Clear to pale brown at base, non- turbid, no sheen, no odour, trace sediment.

<b>Field QA Checks:</b>			<b>Purge Volumes</b>		
Air bubbles in vials or violent reactions?	No		Casing Int. Dia (mm)	50	100
Decontamination as per GHD procedure?	Yes		Vol (L/m of casing)	2.0	7.9
Was sampling equipment pre-cleaned?	Yes				17.7
COC updated?	Yes				

**Comment:** TDS: 236.5, DO%: 74.2

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? .....	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

**Well ID: 0026\_MW016**

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 0.970 m bTOC	Time SWL Measured: 02:11 PM	Well Depth: 6.925 m bTOC	Logic Check: Yes
Project: Shoalhaven LC	Sample Method: Hydrasleeve	NAPL Check: Absent	Well Cap Secure? Yes	NAPL Depth: - m bTOC	Gatic or Stick Up? Gatic
Proj. No.: 12626622	Sample Depth: 8 m bTOC	Screened Interval From: to m bTOC	Stick Up: - m	WQuality Meter Type: YSI	
Site: 0026 - ALB	Flow Cell Used? No	Well Diameter: 50 mm		WLevel Meter Type: Interface Probe	
Sampler: LR JM	Field Filtered? No				
Date: 12/02/2025					
Round: February 2025					

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
14:13	1.0	21.2	5.84	6655.0	1.29	168.1	-	Pale grey towards the base of sleeve, no odour or sheen, low turbidity.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

<b>Comment:</b> .....			
<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

Well ID: 0026\_MW024

Job Information		Sampling Information		Monitoring Well Information	
Client: Department of Defence	Purge Method: No purge	SWL: 0.800 m bTOC	Time SWL Measured: 09:25 AM	Well Depth: 10.800 m bTOC	Logic Check: Yes
Project: Shoalhaven LC	Sample Method: Hydrasleeve	NAPL Check: Absent	Well Cap Secure? Yes	NAPL Depth: - m bTOC	Gatic or Stick Up? Stick Up
Proj. No.: 12626622	Sample Depth: 4 m bTOC	Screened Interval From: to m bTOC	Stick Up: 0.66 m	WQuality Meter Type: YSI pro Plus	
Site: 0026 - ALB	Flow Cell Used? No	Well Diameter: 50 mm		WLevel Meter Type: Interface Probe	
Sampler: JM LR	Field Filtered? No				
Date: 11/02/2025					
Round: Feb Annual					

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec. Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
09:28	1.0	21.4	6.80	938.0	0.80	73.7	-	Pale brown, low turbidity, some sediment, no odour, no sheen.

Field QA Checks:		Purge Volumes
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm) 50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing) 2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes	
COC updated?	Yes	

**Comment:** Replacing monument and cap

Sample Summary	Samples collected?	Duplicate collected?	Duplicate 1 ID:
	Yes	No	
#Primary sample containers	2	Duplicate analysis:	Duplicate 2 ID:



# Purging and Sampling Record

Well ID: 0026\_MW017

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 1.090 m bTOC	Time SWL Measured: 07:22 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 14.280 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 11 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC	Gatic or Stick Up? Gatic		
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm	Stick Up: m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
07:30	1.0	19.1	4.47	457.2	1.19	321.5	-	Clear, no odour or sheen, bottomed 25% of sleeve becoming pale brown.

Field QA Checks:		Purge Volumes
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm) 50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing) 2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes	
COC updated?	Yes	

<b>Comment:</b> .....			
<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

Well ID: 0026\_MW018

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 1.140 m bTOC	Time SWL Measured: 07:00 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 13.830 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 10 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: m bTOC	Gatic or Stick Up? Stick Up		
Sampler: LR JNM	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 13/2/25	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm	Stick Up: 0.8 m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
07:00	1.0	18.4	6.78	5798.0	1.07	375.9	-	Clear to pale brown at base of HS, low turbidity, no sheen, no odour. Trace sediment in base.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** Monument in ok condition. TDS: 4303. Monument in ok condition. DO%:11.60.

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? Yes	Duplicate 1 ID: 0026_QC103_250213
	#Primary sample containers 2	Duplicate analysis: PFAS	Duplicate 2 ID: 0026_QC203_250213



# Purging and Sampling Record

**Well ID: 0026\_MW026**

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: Purge	SWL: 5.440	m bTOC	Time SWL Measured: 08:59 AM	
Project: Shoalhaven LC	Sample Method: Bailer	Well Depth: 8.540	m bTOC	Logic Check: Yes	
Proj. No.: 12626622	Sample Depth: 6 m bTOC	NAPL Check: Absent		Well Cap Secure? Yes	
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: m bTOC		Gatic or Stick Up? Stick Up	
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC		Stick Up: - m	
Date: 13/02/2025	WLevel Meter Type: Interface Probe				
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
09:03	5.0	17.5	6.84	632.0	1.08	94.5	-	Clear, decaying organic odour, no sheen, some suspended particles within column
09:10	10.0	17.2	6.84	673.0	1.54	51.8	5.900	some persistent bubbles forming at surface of water.
09:13	15.0	17.3	6.80	701.0	1.36	12.2	5.985	Fast recharge
09:17	20.0	17.2	6.80	707.0	1.44	8.5	6.030	
09:20	25.0	17.1	6.80	721.0	1.42	4.8	6.080	Fast recharge, >3 well volumes purged, parameters stable, samples collected.

Field QA Checks:		Purge Volumes
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm) 50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing) 2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes	
COC updated?	Yes	

**Comment:** Hydrasleeve already in well, assume AECOMs from last year. Bailer method used as 1 year old builders twine unknown if has PFAS. Monument in okay

Sample Summary	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID:
#Primary sample containers		Duplicate analysis:	Duplicate 2 ID:



# Purging and Sampling Record

**Well ID: 0026\_MW029**

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 3.360 m bTOC	Time SWL Measured: 09:40 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 8.370 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 7 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC	Gatic or Stick Up? Stick Up		
Sampler: LR/JNM	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm	Stick Up: 0.68 m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec. Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
09:45	1.0	19.7	6.57	11261.0	0.84	107.2	-	Clear, pale grey towards base, distinct organics odour, no sheen, trace sediment

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** Well monument in ok condition, hinge ok condition. TDS: 8138. DO%:9.40

<b>Sample Summary</b>	Samples collected?	Yes	Duplicate collected?	No	Duplicate 1 ID:	
	#Primary sample containers	2	Duplicate analysis:		Duplicate 2 ID:	



# Purging and Sampling Record

**Well ID: 0026\_MW031**

Job Information		Sampling Information		Monitoring Well Information	
<b>Client:</b> Defence	<b>Purge Method:</b> No purge	<b>SWL:</b> 1.735 m bTOC	<b>Time SWL Measured:</b> 08:59 AM		
<b>Project:</b> Shoalhaven LC	<b>Sample Method:</b> Hydrasleeve	<b>Well Depth:</b> 5.820 m bTOC	<b>Logic Check:</b> Yes		
<b>Proj. No.:</b> 12626622	<b>Sample Depth:</b> 4 m bTOC	<b>NAPL Check:</b> Absent	<b>Well Cap Secure?</b> Yes		
<b>Site:</b> Albatross	<b>WQuality Meter Type:</b> YSI	<b>NAPL Depth:</b> - m bTOC	<b>Gatic or Stick Up?</b> Gatic		
<b>Sampler:</b> LR	<b>Flow Cell Used?</b> No	<b>Screened Interval From:</b> to m bTOC			
<b>Date:</b> 11/02/2025	<b>WLevel Meter Type:</b> Interface Probe	<b>Well Diameter:</b> mm	<b>Stick Up:</b> -0.075 m		
<b>Round:</b> February 2025	<b>Field Filtered?</b> No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
08:57	1.0	21.7	4.93	16205.0	1.40	220.4	1.735	Pale orange colour, no odour or sheen. Orange sediment towards base of HS.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** Gatic in okay condition. EC checked with 2 YSIs

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: _____
	#Primary sample containers 2	Duplicate analysis: _____	Duplicate 2 ID: _____



# Purging and Sampling Record

Well ID: 0026\_MW038

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 6.065 m bTOC	Time SWL Measured: 11:17 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 7.740 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 7.6 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC	Gatic or Stick Up? Gatic		
Sampler: LR JM	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm	Stick Up: -0.065 m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
<i>Stable when (3 consecutive readings):</i>		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
11:21	1.0	20.3	6.83	1021.0	3.85	432.5	-	Clear, non-turbid, no sheen, no odour, trace sediment at base of HS.

<b>Field QA Checks:</b>			<b>Purge Volumes</b>			
Air bubbles in vials or violent reactions?	No		Casing Int. Dia (mm)	50	100	150
Decontamination as per GHD procedure?	Yes		Vol (L/m of casing)	2.0	7.9	17.7
Was sampling equipment pre-cleaned?	Yes					
COC updated?	Yes					

**Comment:** Gatic good condition.

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID:
	#Primary sample containers 2	Duplicate analysis:	Duplicate 2 ID:



# Purging and Sampling Record

**Well ID: 0026\_MW039**

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 1.306 m bTOC	Time SWL Measured: 12:16 PM		
Project: Shoalhaven LC	Sample Method: Bailer	Well Depth: 2.400 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 2 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026-ALB	WQuality Meter Type: YSI	NAPL Depth: m bTOC	Gatic or Stick Up? Gatic		
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC	Stick Up: - m		
Date: 02/11/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm			
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
12:19	1.0	21.9	6.28	3537.0	1.16	172.2	1.780	Cloudy pale brown, no odour or sheen, low turbidity.
12:26	2.0						2.000	No recharge. thick brown sediment in base of well and on bailer.
	2.5						Dry	

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

**Comment:** Data logger in well. Well in okay condition, O ring okay condition.

<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? No	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

**Well ID: 0026\_MW044**

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 2.590 m bTOC	Time SWL Measured: 07:35 AM		
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 7.895 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 7 m bTOC	NAPL Check: Absent	Well Cap Secure? Yes		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: m bTOC	Gatic or Stick Up? Stick Up		
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 13/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: mm	Stick Up: m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
07:38	1.0	19.5	6.58	320.5	0.87	402.7	-	Clear, pale yellow colour, no odour or sheen.

Field QA Checks:		Purge Volumes
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm) 50 100 150 Vol (L/m of casing) 2.0 7.9 17.7
Decontamination as per GHD procedure?	Yes	
Was sampling equipment pre-cleaned?	Yes	
COC updated?	Yes	

<b>Comment:</b> .....			
<b>Sample Summary</b>	Samples collected? Yes	Duplicate collected? .....	Duplicate 1 ID: .....
	#Primary sample containers 2	Duplicate analysis: .....	Duplicate 2 ID: .....



# Purging and Sampling Record

Well ID: 0026\_MW045

Job Information	Sampling Information	Monitoring Well Information
Client: Defence	Purge Method: No purge	SWL: 2.680 m bTOC
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 9.265 m bTOC
Proj. No.: 12626622	Sample Depth: 7 m bTOC	NAPL Check: Absent
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC
Sampler: LR	Flow Cell Used? No	Screened Interval From: to m bTOC
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm
Round: February 2025	Field Filtered? No	Time SWL Measured: 02:47 PM
		Logic Check: Yes
		Well Cap Secure? Yes
		Gatic or Stick Up? Gatic
		Stick Up: - m

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
14:28	1.0	20.8	4.76	271.0	1.93	397.8	-	Pale pink darkening towards base of sleeve. no odour or sheen, low turbidity.

Field QA Checks:	Purge Volumes
Air bubbles in vials or violent reactions? No	Casing Int. Dia (mm) 50 100 150
Decontamination as per GHD procedure? Yes	Vol (L/m of casing) 2.0 7.9 17.7
Was sampling equipment pre-cleaned? Yes	
COC updated? Yes	

**Comment:** .....

Sample Summary	Samples collected?	Duplicate collected?	Duplicate 1 ID:
	Yes	No	.....
#Primary sample containers	2	Duplicate analysis:	Duplicate 2 ID: .....



# Purging and Sampling Record

Well ID: 0026\_MW072

Job Information		Sampling Information		Monitoring Well Information	
<b>Client:</b> Defence	<b>Purge Method:</b> No purge	<b>SWL:</b> 3.410 m bTOC	<b>Time SWL Measured:</b> 07:50 AM		
<b>Project:</b> Shoalhaven LC	<b>Sample Method:</b> Hydrasleeve	<b>Well Depth:</b> 7.650 m bTOC	<b>Logic Check:</b> Yes		
<b>Proj. No.:</b> 12626622	<b>Sample Depth:</b> 6 m bTOC	<b>NAPL Check:</b> Absent	<b>Well Cap Secure?</b> Yes		
<b>Site:</b> 0026 - ALB	<b>WQuality Meter Type:</b> YSI	<b>NAPL Depth:</b> m bTOC	<b>Gatic or Stick Up?</b> Gatic		
<b>Sampler:</b> LR JNM	<b>Flow Cell Used?</b> No	<b>Screened Interval From:</b> to m bTOC			
<b>Date:</b> 13/02/2025	<b>WLevel Meter Type:</b> Interface Probe	<b>Well Diameter:</b> 50 mm	<b>Stick Up:</b> -0.11 m		
<b>Round:</b> February 2025	<b>Field Filtered?</b> No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec. Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
<i>Stable when (3 consecutive readings):</i>		<i>+/- 0.2 °C</i>	<i>+/- 0.05 pH</i>	<i>+/- 3%</i>	<i>+/- 10%</i>	<i>+/- 10 mV</i>	<i>stable</i>	
08:00	1.0	20.0	6.63	6565.0	2.65	441.6	-	Clear, pale yellow colour, no odour or sheen, no sediment.
					28.20			
								Bubbles and foams up when sampling water - see photo.

Field QA Checks:		Purge Volumes
Air bubbles in vials or violent reactions?	No	<b>Casing Int. Dia (mm)</b> 50 100 150 <b>Vol (L/m of casing)</b> 2.0 7.9 17.7
Decontamination as per GHD procedure?	Yes	
Was sampling equipment pre-cleaned?	Yes	
COC updated?	Yes	

**Comment:** TDS: 4706. Gatic good condition.

Sample Summary			
Samples collected?	Yes	Duplicate collected?	Duplicate 1 ID:
#Primary sample containers	2	Duplicate analysis:	Duplicate 2 ID:



# Purging and Sampling Record

**Well ID: 0026\_MW073**

Job Information	Sampling Information	Monitoring Well Information
Client: Defence	Purge Method: No purge	SWL: 7.405 m bTOC    Time SWL Measured: 08:15 AM
Project: Shoalhaven LC	Sample Method: Hydrasleeve	Well Depth: 11.410 m bTOC    Logic Check: Yes
Proj. No.: 12626622	Sample Depth: 10 m bTOC	NAPL Check: Absent    Well Cap Secure? Yes
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC    Gatic or Stick Up? Gatic
Sampler: LR JNM	Flow Cell Used? No	Screened Interval From: to m bTOC
Date: 13/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm    Stick Up: -0.08 m
Round: February 2025	Field Filtered? No	

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
<i>Stable when (3 consecutive readings):</i>		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
08:15	1.0	19.7	6.88	3395.0	1.81	289.5	-	Pale yellow/ brown colour, no odour or sheen, no sediment.

<b>Field QA Checks:</b> Air bubbles in vials or violent reactions? No Decontamination as per GHD procedure? Yes Was sampling equipment pre-cleaned? Yes COC updated? Yes	<b>Purge Volumes</b> Casing Int. Dia (mm) 50 100 150 Vol (L/m of casing) 2.0 7.9 17.7
--	---

**Comment:** Gatic in good condition. TDS: 2431. DO%: 19.20

<b>Sample Summary</b> Samples collected? Yes Duplicate collected? _____ Duplicate 1 ID: _____ #Primary sample containers 2 Duplicate analysis: _____ Duplicate 2 ID: _____
--



# Purging and Sampling Record

Well ID: 0026\_MW104

Job Information		Sampling Information		Monitoring Well Information	
<b>Client:</b> Defence	<b>Purge Method:</b> No purge	<b>SWL:</b> 6.215 m bTOC	<b>Time SWL Measured:</b> 02:25 PM		
<b>Project:</b> Shoalhaven LC	<b>Sample Method:</b> Hydrasleeve	<b>Well Depth:</b> 9.225 m bTOC	<b>Logic Check:</b> Yes		
<b>Proj. No.:</b> 12626622	<b>Sample Depth:</b> 8 m bTOC	<b>NAPL Check:</b> Absent	<b>Well Cap Secure?</b> Yes		
<b>Site:</b> 0026 - ALB	<b>WQuality Meter Type:</b> YSI	<b>NAPL Depth:</b> - m bTOC	<b>Gatic or Stick Up?</b> Gatic		
<b>Sampler:</b> LR	<b>Flow Cell Used?</b> No	<b>Screened Interval From:</b> to m bTOC	<b>Stick Up:</b> - m		
<b>Date:</b> 12/02/2025	<b>WLevel Meter Type:</b> Interface Probe	<b>Well Diameter:</b> 50 mm			
<b>Round:</b> February 2025	<b>Field Filtered?</b> No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
<i>Stable when (3 consecutive readings):</i>		<i>+/- 0.2 °C</i>	<i>+/- 0.05 pH</i>	<i>+/- 3%</i>	<i>+/- 10%</i>	<i>+/- 10 mV</i>	<i>stable</i>	
14:25	1.0	20.7	5.03	803.0	4.09	484.2	-	Slightly cloudy, no odour or sheen.

<b>Field QA Checks:</b>		<b>Purge Volumes</b>	
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm)	50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing)	2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes		
COC updated?	Yes		

<b>Comment:</b> .....			
<b>Sample Summary</b>	Samples collected?	Yes	Duplicate collected?
	#Primary sample containers	2	Duplicate analysis:
			Duplicate 1 ID:
			Duplicate 2 ID:



# Purging and Sampling Record

Well ID: 0026\_MW117

Job Information		Sampling Information		Monitoring Well Information	
Client: Defence	Purge Method: No purge	SWL: 4.230 m bTOC	Time SWL Measured: 10:12 AM		
Project: Shoalhaven LC	Sample Method: Bailer	Well Depth: 4.440 m bTOC	Logic Check: Yes		
Proj. No.: 12626622	Sample Depth: 4.4 m bTOC	NAPL Check: Absent	Well Cap Secure? No		
Site: 0026 - ALB	WQuality Meter Type: YSI	NAPL Depth: - m bTOC	Gatic or Stick Up? Stick Up		
Sampler: LR JM	Flow Cell Used? No	Screened Interval From: to m bTOC			
Date: 12/02/2025	WLevel Meter Type: Interface Probe	Well Diameter: 50 mm	Stick Up: - m		
Round: February 2025	Field Filtered? No				

Time (hh:mm)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µs/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m bTOC)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		+/- 0.2 °C	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable	
10:15	0.3	22.7	5.93	287.3	2.43	72.3	-	Cloudy brown, turbid, no odour or sheen. Very low water level, samples collected

Field QA Checks:		Purge Volumes
Air bubbles in vials or violent reactions?	No	Casing Int. Dia (mm) 50 100 150
Decontamination as per GHD procedure?	Yes	Vol (L/m of casing) 2.0 7.9 17.7
Was sampling equipment pre-cleaned?	Yes	
COC updated?	Yes	

**Comment:** Monument and standpipe bent. 50 mm of standpipe sawed off and well cap replaced. Had to pull monument straight and jiggle to fit bailer down.

Sample Summary	
Samples collected? Yes	Duplicate collected? No
#Primary sample containers 2	Duplicate analysis:
	Duplicate 1 ID:
	Duplicate 2 ID:





# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW001  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 11/2/2025 TIME: 3:18:00 PM  
SITE: 0026 - ALB LOGGED BY: LR

COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Underneath bridge

## ENVIRONMENTAL OBSERVATIONS

WEATHER Sunny 26  
VEGETATION Vegetation on creek banks  
SLOPE -  
EROSION minor bank erosion

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Brown, no odour, no sheen, low turbidity.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 27.1  
DO (mg/L) 4.66  
DO (%S) 57.50  
CONDUCTIVITY (µS/cm) 519.0  
pH (pH units) 7.04  
REDOX (mV) 366.0  
TDS (mg/L) 325.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT large pool not flowing  
CROSS SECTION WIDTH (m) 1  
DEPTH (m) 0.5  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW001	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW002  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 11/2/2025 TIME: 2:54:00 PM  
SITE: 0026 - ALB LOGGED BY: LR  
COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Culvert underneath Albatross Rd

## ENVIRONMENTAL OBSERVATIONS

WEATHER Sunny 26  
VEGETATION Trees overhanging  
SLOPE -  
EROSION minor bank erosion

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, no odour, slight brown colour. Brittle bacterial sheen in near stagnant pool.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 21.8  
DO (mg/L) 1.34  
DO (%S) 15.00  
CONDUCTIVITY (µS/cm) 340.6  
pH (pH units) 6.48  
REDOX (mV) 132.5  
TDS (mg/L) 236.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT Slow trickle  
CROSS SECTION WIDTH (m) 0.2  
DEPTH (m) 0.05  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW002	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW004B  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 11/2/2025 TIME: 3:42:00 PM  
SITE: 0026 - ALB LOGGED BY: LR  
COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Sample taken from creek bank

## ENVIRONMENTAL OBSERVATIONS

WEATHER Sunny 26  
VEGETATION Vegetation on creek banks  
SLOPE Steep sandy banks  
EROSION Some erosion on banks

## DESCRIPTIONS

SURFACE WATER  
(colour, turbidity, odour, sheen) Pale brown, slight tannin tea colour, no odour, no sheen, low turbidity.  
SEDIMENT  
(describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 24.1  
DO (mg/L) 4.55  
DO (%S) 54.50  
CONDUCTIVITY (µS/cm) 289.1  
pH (pH units) 6.76  
REDOX (mV) 418.9  
TDS (mg/L) 191.50

## HYDROLOGICAL DATA

FLOW MEASUREMENT Creek moderate flow  
CROSS SECTION WIDTH (m) 5  
DEPTH (m) 0.2  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW004B	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW005  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 11/2/2025 TIME: 1:25:00 PM  
SITE: 0026 - ALB LOGGED BY: LR  
COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Large pool below bedrock confined racing section and water fall (1.0 m)

## ENVIRONMENTAL OBSERVATIONS

WEATHER Sunny 28  
VEGETATION none  
SLOPE moderate to steepstepping gradient  
EROSION no erosion evident

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, no odour or sheen. Small amount of foam accumulated in racing section above fall.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 23.1  
DO (mg/L) 6.54  
DO (%S) 75.00  
CONDUCTIVITY (µS/cm) 305.7  
pH (pH units) 7.18  
REDOX (mV) 403.8  
TDS (mg/L) 206.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT Fast constant flow into pool.  
CROSS SECTION WIDTH (m) NA - large pool 50x50  
DEPTH (m) >2m  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW005				

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW006  
PROJECT NAME: Shoalhaven LC SEDIMENT ID: \_\_\_\_\_  
CLIENT: Defence DATE: 13/2/2025 TIME: 7:20  
SITE: 0026 - ALB LOGGED BY: JNM  
COORDINATES/GPS (if applicable) \_\_\_\_\_  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION From pool, downstream of culvert outlet

## ENVIRONMENTAL OBSERVATIONS

WEATHER Sunny, warm  
VEGETATION Grasses and small vegetation on banks. Algae on rocks within creek base.  
SLOPE Gentle slope westward  
EROSION Minor erosion features on creek banks. Fallen trees, upended soil.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, non-turbid, no sheen, foam and bubbles on surface, no odour.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 21.6  
DO (mg/L) 5.58  
DO (%S) 63.60  
CONDUCTIVITY (µS/cm) 460.5  
pH (pH units) 7.38  
REDOX (mV) 365.5  
TDS (mg/L) 314.50

## HYDROLOGICAL DATA

FLOW MEASUREMENT Moderate flow out of culvert pipe  
CROSS SECTION WIDTH (m) 2.5  
DEPTH (m) 0.2  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW006	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW007  
 PROJECT NAME: Shoalhaven LC SEDIMENT ID: \_\_\_\_\_  
 CLIENT: Defence DATE: 12/2/2025 TIME: 15:45  
 SITE: 0026 - ALB LOGGED BY: JNM  
 COORDINATES/GPS (if applicable) \_\_\_\_\_  
 SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION From water in surface drain, upstream of culvert headwall. Inside fence.

## ENVIRONMENTAL OBSERVATIONS

WEATHER Raining  
 VEGETATION Grasses and reeds in drain.  
 SLOPE near flat  
 EROSION some in drain, large pools

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Pale brown, turbid, brittle sheen, no odour, algae  
 SEDIMENT (describe as soil) \_\_\_\_\_

## FIELD MEASUREMENTS

TEMPERATURE (°C) 22.6  
 DO (mg/L) 3.68  
 DO (%S) 38.90  
 CONDUCTIVITY (µS/cm) 487.5  
 pH (pH units) 6.82  
 REDOX (mV) 406.7  
 TDS (mg/L) 332.50

## HYDROLOGICAL DATA

FLOW MEASUREMENT Non flowing  
 CROSS SECTION WIDTH (m) 3  
 DEPTH (m) 0.1  
 OTHER \_\_\_\_\_

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW007	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future): \_\_\_\_\_



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW008  
 PROJECT NAME: Shoalhaven LC SEDIMENT ID: \_\_\_\_\_  
 CLIENT: Defence DATE: 12/2/2025 TIME: 12:14:00 PM  
 SITE: 0026 -ALB LOGGED BY: JNM LR  
 COORDINATES/GPS (if applicable) \_\_\_\_\_  
 SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: \_\_\_\_\_

DETAILED SAMPLE LOCATION DESCRIPTION At intersection of 3 creeks/channels

## ENVIRONMENTAL OBSERVATIONS

WEATHER overcast  
 VEGETATION vegetated banks  
 SLOPE steep slopes for creek beds  
 EROSION erosion in creek banks. Exposed rock.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, non-turbid, no sheen, no odour, some sediment at base of creek.  
 SEDIMENT (describe as soil) \_\_\_\_\_

## FIELD MEASUREMENTS

TEMPERATURE (°C) 20.5  
 DO (mg/L) 6.26  
 DO (%S) 69.40  
 CONDUCTIVITY (µS/cm) 695.0  
 pH (pH units) 7.46  
 REDOX (mV) 283.8  
 TDS (mg/L) 494.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT Slight trickle  
 CROSS SECTION WIDTH (m) 2  
 DEPTH (m) 0.2  
 OTHER \_\_\_\_\_

## SAMPLE INFORMATION

SAMPLE ID <i>(one primary sample per row)</i>	NO. CONTAINERS	DUPLICATE ID <i>(if applicable)</i>	DUPLICATE ANALYSIS <i>(if applicable)</i>	COMMENT
0026_SW008	2	No		
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future): \_\_\_\_\_



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW009  
 PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
 CLIENT: Defence DATE: 12/2/2025 TIME: 12:30:00 PM  
 SITE: 0026 -ALB LOGGED BY: JNM LR

COORDINATES/GPS (if applicable)  
 SAMPLING METHOD (ie grab, bucket) SURFACE WATER: grab SEDIMENT:

DETAILED SAMPLE LOCATION DESCRIPTION Sampled out of dam

## ENVIRONMENTAL OBSERVATIONS

WEATHER Overcast  
 VEGETATION vegetated banks, reeds,  
 SLOPE steep banks  
 EROSION some surface erosion

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Pale brown, turbid, feathers and bird droppings on surface of water, no sheen, slight decaying organics odour.  
 SEDIMENT (describe as soil)

## FIELD MEASUREMENTS

TEMPERATURE (°C) 26.5  
 DO (mg/L) 10.69  
 DO (%S) 137.00  
 CONDUCTIVITY (µS/cm) 530.0  
 pH (pH units) 9.21  
 REDOX (mV) 321.5  
 TDS (mg/L) 338.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT No flow  
 CROSS SECTION WIDTH (m) 40 m  
 DEPTH (m) unknown  
 OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW009				

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW012  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 12/2/2025 TIME: 11:51:00 AM  
SITE: 0026 -ALB LOGGED BY: JNM LR  
COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT:

DETAILED SAMPLE LOCATION DESCRIPTION At intersection of two creeks.

## ENVIRONMENTAL OBSERVATIONS

WEATHER overcast  
VEGETATION vegetated banks  
SLOPE steep slopes for creek beds  
EROSION erosion in creek banks. Exposed rock.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, non-turbid, no sheen, no odour, some sediment at base of creek.  
SEDIMENT (describe as soil)

## FIELD MEASUREMENTS

TEMPERATURE (°C) 22.7  
DO (mg/L) 6.25  
DO (%S) 72.50  
CONDUCTIVITY (µS/cm) 591.0  
pH (pH units) 7.97  
REDOX (mV) 350.8  
TDS (mg/L) 403.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT Slight trickle  
CROSS SECTION WIDTH (m) 2  
DEPTH (m) 0.2  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW012	2	No		

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW014  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 13/2/2024 TIME: 11:15:00 AM  
SITE: 0026 - ALB LOGGED BY: JM / SF

COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT:

DETAILED SAMPLE LOCATION DESCRIPTION On the side of creek, west of Princes Highway bridge.

## ENVIRONMENTAL OBSERVATIONS

WEATHER Overcast, no rain.  
VEGETATION Reedy, algae on rocks.  
SLOPE Flat around sampling location, steep rocks at falls.  
EROSION None.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, non-turbid, no odour or sheen. Pale brown tinge.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 23.0  
DO (mg/L) 5.10  
DO (%S) 59.50  
CONDUCTIVITY (µS/cm) 256.6  
pH (pH units) 7.10  
REDOX (mV) 424.1  
TDS (mg/L) Not recorded

## HYDROLOGICAL DATA

FLOW MEASUREMENT Moderate flow  
CROSS SECTION WIDTH (m) ~25 m  
DEPTH (m) > 2 m  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW014_250213	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW013  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 13/2/2025 TIME: 10:55:00 AM  
SITE: 0026 - ALB LOGGED BY: LR JM

COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Sampled from creek, base of creek flowing section.

## ENVIRONMENTAL OBSERVATIONS

WEATHER Overcast  
VEGETATION Lantana on creek banks.  
SLOPE Steep creek banks, exposed rocks. Gentle slopes within creek gully.  
EROSION Bank erosion, creek incised into surrounding topography.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, non-turbid, no sheen, no odour  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 22.1  
DO (mg/L) 4.25  
DO (%S) 47.70  
CONDUCTIVITY (µS/cm) 567.0  
pH (pH units) 7.23  
REDOX (mV) 436.0  
TDS (mg/L) 383.50

## HYDROLOGICAL DATA

FLOW MEASUREMENT Steady trickle  
CROSS SECTION WIDTH (m) 2  
DEPTH (m) 0.15  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW013	2	-	-	

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW018  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 12/2/2025 TIME: 15:30  
SITE: 0026 - ALB LOGGED BY: JNM

COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION From pool in surface drain

## ENVIRONMENTAL OBSERVATIONS

WEATHER Raining  
VEGETATION Grasses in drain  
SLOPE near flat  
EROSION some in drain, large pools

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Pale brown, turbid, no sheen, no odour.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 29.3  
DO (mg/L) 5.14  
DO (%S) 66.10  
CONDUCTIVITY (µS/cm) 420.7  
pH (pH units) 7.43  
REDOX (mV) 392.4  
TDS (mg/L) 253.50

## HYDROLOGICAL DATA

FLOW MEASUREMENT Non flowing  
CROSS SECTION WIDTH (m) 1.5  
DEPTH (m) 0.3  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW018	2	-	-	

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW020  
 PROJECT NAME: Shoalhaven LC SEDIMENT ID: \_\_\_\_\_  
 CLIENT: Defence DATE: 11/2/2025 TIME: 2:00:00 PM  
 SITE: 0026 - ALB LOGGED BY: JNM

COORDINATES/GPS (if applicable) \_\_\_\_\_  
 SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Sample taken from flowing water upstream of culvert headwall

## ENVIRONMENTAL OBSERVATIONS

WEATHER Sunny 28  
 VEGETATION Algae lining rocks  
 SLOPE steep 1.5 m high banks. Near level surrounding  
 EROSION Creek bank erosion noted

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, no odour or sheen, non-turbid.  
 SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 21.3  
 DO (mg/L) 8.22  
 DO (%S) 94.10  
 CONDUCTIVITY (µS/cm) 177.7  
 pH (pH units) 7.16  
 REDOX (mV) 540.1  
 TDS (mg/L) 122.90

## HYDROLOGICAL DATA

FLOW MEASUREMENT Slow trickle  
 CROSS SECTION WIDTH (m) 0.5  
 DEPTH (m) 0.1  
 OTHER \_\_\_\_\_

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW020				

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future): \_\_\_\_\_



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW049  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 12/2/2025 TIME: 10:44:00 AM  
SITE: 0026 -ALB LOGGED BY: LR JM  
COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION at the convergence of two gullies/creeks. Down gradient of the base near MW005.

## ENVIRONMENTAL OBSERVATIONS

WEATHER 26, humid  
VEGETATION Closed canopy, native veg.  
SLOPE moderate to steep slope leading into drainage gully.  
EROSION High amount of erosion. Stream incised >1.0 m into bank, bare exposed soil.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, no odour or sheen, slight brown tinge.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 19.4  
DO (mg/L) 2.41  
DO (%S) 26.20  
CONDUCTIVITY (µS/cm) 503.0  
pH (pH units) 6.87  
REDOX (mV) 235.2  
TDS (mg/L) 364.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT Steady trickle in creek.  
CROSS SECTION WIDTH (m) 1.5  
DEPTH (m) 0.3  
OTHER -

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW049	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW106  
 PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
 CLIENT: Defence DATE: 12/2/2025 TIME: 3:20:00 PM  
 SITE: 0026 - ALB LOGGED BY: JNM

COORDINATES/GPS (if applicable)  
 SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Culvert in Explosives Storage Compound

## ENVIRONMENTAL OBSERVATIONS

WEATHER Overcast  
 VEGETATION Reeds in drain  
 SLOPE near flat  
 EROSION none observed

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Brown, low turbidity, some algae, no sheen, no odour  
 SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 23.9  
 DO (mg/L) 5.42  
 DO (%S) 58.00  
 CONDUCTIVITY (µS/cm) 578.0  
 pH (pH units) 6.26  
 REDOX (mV) 445.0  
 TDS (mg/L) 454.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT Slight trickle  
 CROSS SECTION WIDTH (m) 1  
 DEPTH (m) 0.005  
 OTHER -

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW106	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW065  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 13/2/2025 TIME: 9:18:00 AM  
SITE: 0026 -ALB LOGGED BY: LR JM  
COORDINATES/GPS (if applicable)  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Inside bed of creek. Near MW026. convergence of two streams.

## ENVIRONMENTAL OBSERVATIONS

WEATHER Overcast  
VEGETATION Lantana on creek banks.  
SLOPE Steep Creek banks, exposed rocks. Gentle slopes within creek gully.  
EROSION Bank erosion, creek incised into surrounding topography.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Clear, pale brown colour, no odour or sheen.  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 21.2  
DO (mg/L) 2.78  
DO (%S) 31.60  
CONDUCTIVITY (µS/cm) 543.0  
pH (pH units) 7.23  
REDOX (mV) 187.8  
TDS (mg/L) 383.50

## HYDROLOGICAL DATA

FLOW MEASUREMENT Steady trickle  
CROSS SECTION WIDTH (m) 2  
DEPTH (m) 0.15  
OTHER -

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW056	2	-	-	

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW123  
PROJECT NAME: Shoalhaven LC SEDIMENT ID:  
CLIENT: Defence DATE: 11/02/2025 TIME: 12:29  
SITE: 0026 - ALB LOGGED BY: LR JM

COORDINATES/GPS (if applicable)

SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION Creek at base of gully, moderate to high slopes leading down to location. Access via locked gate at top of hill.

## ENVIRONMENTAL OBSERVATIONS

WEATHER 26 sunny.

VEGETATION Paper barks. Weeds lining creek banks.

SLOPE moderate to high slope leading down to location.

EROSION Bank erosion evident, wombat holes.

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Pale brown, low turbidity, wood debris in waterway, no odour or sheen.

SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 21.0

DO (mg/L) 2.84

DO (%S) 31.40

CONDUCTIVITY (µS/cm) 588.0

pH (pH units) 6.99

REDOX (mV) 329.8

TDS (mg/L) 416.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT No flow

CROSS SECTION WIDTH (m) 2.5

DEPTH (m) 0.5

OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW123_250211	2	0026_QC100		
		0026_QC200		

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



# SURFACE WATER AND SEDIMENT SAMPLING RECORD

PROJECT NO.: 12626622 SURFACE WATER ID: 0026\_SW124  
PROJECT NAME: Shoalhaven LC SEDIMENT ID: \_\_\_\_\_  
CLIENT: Defence DATE: 12/2/2025 TIME: 16:05  
SITE: 0026 -ALB LOGGED BY: JNM  
COORDINATES/GPS (if applicable) \_\_\_\_\_  
SAMPLING METHOD (ie grab, bucket) SURFACE WATER: Grab SEDIMENT: -

DETAILED SAMPLE LOCATION DESCRIPTION From water in surface drain, upstream of culvert headwall under road. Inside fence.

## ENVIRONMENTAL OBSERVATIONS

WEATHER Raining  
VEGETATION Some grasses and reeds in drain.  
SLOPE near flat  
EROSION some in drain, large pools

## DESCRIPTIONS

SURFACE WATER (colour, turbidity, odour, sheen) Pale brown, turbid, brittle sheen, no odour, algae  
SEDIMENT (describe as soil) -

## FIELD MEASUREMENTS

TEMPERATURE (°C) 27.5  
DO (mg/L) 3.82  
DO (%S) 48.20  
CONDUCTIVITY (µS/cm) 716.0  
pH (pH units) 7.04  
REDOX (mV) 428.8  
TDS (mg/L) 442.00

## HYDROLOGICAL DATA

FLOW MEASUREMENT Non flowing  
CROSS SECTION WIDTH (m) 3  
DEPTH (m) 0.1  
OTHER

## SAMPLE INFORMATION

SAMPLE ID (one primary sample per row)	NO. CONTAINERS	DUPLICATE ID (if applicable)	DUPLICATE ANALYSIS (if applicable)	COMMENT
0026_SW124	2			

## OTHER COMMENTS FOR CONSIDERATION

(e.g. health and safety, access issues, change in location, general observation, notes for future):



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