

PFAS ENVIRONMENTAL SITE ASSESSMENT **REPORT**

Western Sydney University
2 College Street, Richmond NSW

WSU Hawkesbury Campus – August 2024

Geo-Logix
environment • geotech

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PFAS ENVIRONMENTAL SITE ASSESSMENT

Western Sydney University, Hawkesbury Campus

2 College Street,

Richmond NSW 2753

PREPARED FOR

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Report reference: 2301034ESAFinal_12Aug24

Date: 12 August 2024

DISTRIBUTION AND REVISION REGISTER

Revision Number	Date	Description	Recipient	Deliverables
V01	20/06/24	Draft Report 2301034ESAFinalDraftV01_20June24	Hamilton Locke Lawyers Western Sydney University	1 Electronic Copy
V02	12/08/24	Final Report 2301034ESAFinal_12Aug24	Hamilton Locke Lawyers Western Sydney University	1 Electronic Copy

Issued by: Geo-Logix Pty Ltd

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EXECUTIVE SUMMARY

Geo-Logix Pty Ltd (Geo-Logix) was engaged by Hamilton Locke Pty Ltd (Client Agent) on behalf of Western Sydney University (Western) to complete an assessment for the presence of environmental PFAS contamination (per- and polyfluoroalkyl substances) across Western's Hawkesbury Campus.

The investigation was in response to the discovery of PFAS contamination to soil, groundwater and surface water in the location of a proposed educational facility, referred to as the Centre of Excellence (former development site). Since the PFAS discovery, the Centre of Excellence has relocated to another site.

The broader Hawkesbury campus spans approximately 14km^2. The property has been utilised as an agricultural school since 1891. The existing campus was established in the 1980s.

Geo-Logix objectives for this report, as agreed in proposal Q2069, include:

- Conduct site wide investigations to establish PFAS concentrations in soil, groundwater and surface water at locations selected by Western to assess potential complete source-pathway-receptor linkages.
- Update and refine the existing conceptual site model that evaluates the source-pathway-receptor linkages to evaluate the potential risks to human health and the environment.
- Provide recommendations for any management / remediation that may be required to mitigate the identified risks.
- Identify any remaining data gaps from the investigation results that preclude an assessment of the potential risks or identifying appropriate remediation management options, if required.

It should be noted the objectives are relevant to the sampling plan issued by Western, they were not intended to include a complete re-analysis of the PFAS conditions within the former development site and surrounding campus grounds.

The scope of works for assessment included:

- Review of historical reports provided to Geo-Logix.
- Preparation of a Sampling Analysis and Quality Plan (SAQP) for preselected sample locations within the Hawkesbury campus.
- Site walkover to assess sample locations and logistic needs.
- Installation and development of 76 groundwater wells (GW101 – GW176) at varying depths, targeting first groundwater.
- Soil sampling from bores during groundwater well installation.
- Elevation survey of Geo-Logix installed groundwater wells.
- Groundwater sampling from all Geo-Logix installed groundwater wells using Hydrasleeves, including the collection of the standing water level (SWL) and physiochemical parameters.
- Surface water sampling from thirteen water dams across the site, including collection of the physiochemical parameters.
- Submission of soil, groundwater, and surface water samples to a NATA accredited laboratory for PFAS analysis.

- Provision of this ESA Report.

Key findings of the assessment include:

- Geology is clay interbedded with sandy clay with varying percentage of fine – medium sand. The geology is consistent with Londonderry Clay stratigraphy.
- Two hydrogeological units were encountered across Western. At a few locations shallow groundwater is perched within sandier lenses. These sandier lenses are localised and presumably pinch and swell throughout the Londonderry Clay as evidence of channel migration or higher energy depositional events. Perching of shallow groundwater is most prominent around the former development site and campus grounds and likely a result of irrigation. Deeper regional groundwater, a zone of continuous saturation within the Londonderry Clay, is encountered between 7 – 15 mbg.
- Regional groundwater flow is towards the east – southeast beneath the majority of the site. A groundwater divide beneath the western portion of the site changes groundwater flow direction from south east to the southwest. Groundwater flow velocity within the regional aquifer is very low, estimated to be < 2cm per year.
- During well drilling soil samples were collected from the top 2m of soil for laboratory analysis. PFAS were not detected in soil at concentrations greater than the laboratory limits of reporting.
- PFOS was detected at a concentration above SAC (Freshwater 95% Species Protection) in one shallow perched water sample GW130, located beneath the campus soccer field.
- PFOA was not detected in shallow groundwater in excess of SAC. Total PFAS were reported at their highest concentrations in shallow groundwater beneath the campus soccer field (16 µg/l). Total PFAS concentrations were less than 1 µg/l in site wide shallow groundwaters, excluding GW112 located on the western site boundary, which did not report a PFAS detection.
- PFOS and PFOA were not detected in regional groundwater at concentrations in excess of SAC (Freshwater 95% Species Protection). Total PFAS was detected at highest concentrations in regional groundwater at two locations centrally located GW156 (1.07 µg/l) and GW136 (1.69 µg/l). Total PFAS was reported at concentrations below 1 µg/L in 4 other wells, three within the central portion and one located in the western portion. PFAS was non-detect in all other regional groundwater wells.
- PFOS and PFOA were not detected at concentrations above SAC (Freshwater 95% Species Protection) in all surface water samples analysed. Within surface waters that are included in the recycled water management plan total PFAS was reported at consistent concentrations of 0.04 µg/L and 0.08 µg/L, excluding Lindsey Dam on the Eastern Portion which reported the maximum Total PFAS concentration of 0.17 µg/L. PFAS was not detected in the unnamed dam in the western corner of the site (DW1) and Tafe Dam (DW5). Total PFAS was reported at a concentration of 0.15 µg/L in the former stock watering dam located at the southeastern site boundary (DW13).

The results of assessment did not identify PFAS contamination to soil, regional groundwater or surface waters at concentrations above SAC. PFOS was the only compound reported at a concentration above SAC in shallow perched water beneath the soccer field. Given that shallow perched water is not being

extracted, the human health exposure pathway is incomplete. Therefore, the associated risk to both health and the environment is considered low and acceptable.

The interaction between shallow perched water and unlined stormwater drains around the former development site and student accommodation is unknown and potentially represents a complete exposure pathway to the environment.

The findings of this assessment indicate there are no unacceptable risks to health or the environment from PFAS at the locations investigated. It is understood there is a PFAS source on Hawkesbury campus. The long-term risk to health or environment from that PFAS source is beyond the limits of this study.

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1. INTRODUCTION

Geo-Logix Pty Ltd (Geo-Logix) was engaged by Hamilton Locke Pty Ltd (Client Agent) on behalf of Western Sydney University (Western) to complete an assessment for the presence of environmental PFAS contamination (per- and polyfluoroalkyl substances) across Western's Hawkesbury Campus NSW (Figure 1 – approximately 14km^2 area).

The investigation was in response to the discovery of PFAS contamination to soil, groundwater and surface water in the location of a proposed educational facility, referred to as the Centre of Excellence (former development site; Figure 2). Since the PFAS discovery, the Centre of Excellence has relocated to another site.

1.1 Project Background

The broader Hawkesbury campus spans approximately 14km^2. The property has been utilised as an agricultural school since 1891. The existing campus was established in the 1980s.

The Hawkesbury campus has numerous land uses including:

- Childcare centre.
- Residential aged care facility.
- Student housing.
- Educational buildings and grounds.
- Sports ovals.
- Agricultural land (used both for education / research and human consumption).
- Industry partnerships.
- Horse racing training facility.

As per the planning process for the former development site, Douglas Partners were engaged in 2021 to conduct a contamination assessment of the proposed development area[1]. That investigation identified minor contamination within fill that had been applied to the development area. A sample of groundwater within the development footprint identified the presence of PFAS. The PFAS finding triggered further investigations within, and surrounding land of the former development site[2]. PFAS has since been reported at concentrations in excess of environmental / health assessment standards in shallow soils, surface water drains, shallow perched groundwaters, and deeper regional groundwater within the main campus grounds, but primarily concentrated around the former development site.

Consultants undertaking the assessments have concluded the likely origin of PFAS is from imported fill of unknown origin brought onto the former development site. A summary of the consultants work and findings is included in Section 3.

[1] Douglas Partners 2021, *Detailed Site Investigation (Contamination) Centre of Excellence in Agricultural Education (CoE), Londonderry Road, Richmond NSW*. Ref: 85644.04, April 2021.
[2] Douglas Partners 2022, *PFAS Investigations, Proposed Centre of Excellence, Vines Drive, Richmond NSW*. Ref: 85644.12, September 2022.

1.2 Objectives

Geo-Logix objectives, as agreed in proposal Q2069, include:

- Conduct site wide investigations to establish PFAS concentrations in soil, groundwater and surface water at locations selected by Western to assess potential complete source-pathway-receptor linkages.
- Update and refine the existing conceptual site model that evaluates the source-pathway-receptor linkages to evaluate the potential risks to human health and the environment.
- Provide recommendations for any management / remediation that may be required to mitigate the identified risks.
- Identify any remaining data gaps from the investigation results that preclude an assessment of the potential risks or identifying appropriate remediation management options, if required.

It should be noted the objectives are relevant to the sampling plan issued by Western, they were not intended to include a complete re-analysis of the PFAS conditions within the CoE and surrounding campus grounds.

1.3 Scope

The scope of works for assessment included:

- review of historical reports provided to Geo-Logix (Section 3.3);
- preparation of a Sampling Analysis and Quality Plan (SAQP) for preselected sample locations within the Hawkesbury campus;
- site walkover to assess sample locations and logistic needs;
- installation and development of 76 groundwater wells at varying depths, targeting first groundwater;
- soil sampling from bores during groundwater well installation;
- elevation survey of Geo-Logix installed groundwater wells;
- groundwater sampling from all Geo-Logix installed groundwater wells using Hydrasleeves, including the collection of the standing water level (SWL) and physiochemical parameters;
- surface water sampling from thirteen water dams across the site, including collection of the physiochemical parameters;
- submission of soil, groundwater, and surface water samples to a NATA accredited laboratory for PFAS analysis; and
- provision of this ESA Report.

Given the size of the Western campus, investigation for PFAS was split into three separate areas: the western portion (Yarramundi paddocks), the central portion (campus core and Blacktown paddocks), and the eastern portion (Clarendon paddocks), as outlined in Figure 1.

2. SITE IDENTIFICATION AND SETTING

2.1 Site Use

A site walkover of the western portion was completed on 8 August 2023, central portion was completed between 17 and 18 October 2023 and eastern portion during January 2024. The following was observed:

- The central portion of the site consists largely of the main campus core including administration buildings, education buildings, recreational fields, student accommodation, and residential aged care facility.

  The campus core was generally flat, with undulating fill raised areas for the student accommodation and adjacent the aged care facility.
- A biodiversity conservation area runs along the southern boundary and extends into the southern portion of site.
- Agricultural land used for livestock, spans the eastern, southern, and northwest portions of the site.

Hawkesbury Campus utilises recycled water, referred to as the Hawkesbury Water Recycling Scheme[3]. Several man-made dams/ponds with connecting pipelines are utilised for the storage and distribution of recycled water and storm water throughout Hawkesbury campus.

Reclaimed water is supplied from Sydney Water Corporation's (SWC) Richmond Recycled Water Plant. The supply agreement only permits water use for pasture and fodder crop irrigation that occurs within paddocks of the Hawkesbury Campus, it does not permit irrigation for horticultural production to be consumed or distributed for human consumption.

Stormwater harvested from the main campus and the suburb of Richmond Township is primarily used for landscape and sports field irrigation within the main campus grounds. It is understood there is a recycled water quality monitoring plan which includes regular monitoring for microbiological parameters, physical parameters and chemical parameters (nutrients and cations). It is not known whether PFAS is monitored in recycled wastewater or storm water.

Treated wastewater discharge to land is recognised as an activity associated with PFAS contamination[4]. Stormwater collection and reuse may also be an activity associated with PFAS contamination via redistribution of ambient PFAS, and/or potential point source PFAS leached from grounds within the former development site and Student accommodation area, an area identified as being PFAS contaminated.

[3] WSU 2023, *Recycled Water Risk Management Plan*. Western Sydney University, Environmental Sustainability, Division of Infrastructure and Commercial. August 2023.
[4] HEPA 2020, *PFAS National Environmental Management Plan NEMP Version 2.0*, National Chemicals Working Group of the Heads of EPAs Australia and New Zealand, January 2020.

2.2 Site Identification

Western's Hawkesbury campus site identification is summarised in Table 1.

Table 1: Site Identification

Detail	Information
Street Address	2 College Street, Richmond NSW 2753
Lot and DP	• Lot 32 DP 1270808 • Lot 2 DP 1105163 • Lot 2 DP 1051798 • Lot 10 DP 752032 • Lot 186 DP 39768 • Lot 185 DP 39768 • Lot 10 DP 1293174 • Lot 11 DP 1293174 • Lot 1 DP 1051798 (133 Londonderry Road)
Approximate Site Area	14km^2
Site Use	Western's Hawkesbury Campus
Zoning	SP1 Education Agriculture - Hawkesbury Local Environmental Plan (LEP) 2012.
Council	Hawkesbury City Council

2.3 Surrounding Land use

The identified surrounding land use is summarised in Table 2 (Figure 2).

Table 2: Surrounding Land use

Location	Land use
Northern Boundary	• Residential suburb of Hobartville, Richmond NSW • Richmond Golf Club • Richmond Water Recycling Plant, a land use potentially associated with PFAS contamination • Richmond Royal Australian Air Force Base (RAAF) on opposite side of Hawkesbury Valley Way. The RAAF base operates an airfield, a land use often associated with PFAS contamination.
North-east Boundary	• Rural residential lots • Hawkesbury Showground • Hawkesbury Race Club and associated equestrian facilities
Eastern Boundary	• Rickabys Creek with rural residential lots on the opposite side of the creek • Rock and Dirt Recycling Facility – a land use potentially associated with PFAS contamination • Hawkesbury City Waste Management Facility (Landfill) – a land use commonly associated with PFAS contamination

Location	Land use
Southern Boundary	• The Driftway with rural residential lots on the opposite side
Western Boundary	• Castlereagh Road with residential lots on the opposite side

2.4 Site Environmental Setting

The site environmental setting is presented in Table 3.

Table 3: Site Environmental Setting

Detail	Information
Geology	The site geology is primarily mapped as the Tertiary Londonderry Clay[5]. The Londonderry Clay is recognised as being composed of fluvial overbank deposits. Fluvial overbank deposition occurs in floodplains when the main river channel overflows and deposits fine sediment upon the river overbank. They are characterised by predominantly clay / silt / fine sand deposition. Interbedded lenses of coarser sand / clay mixtures may exist as evidence of periods of higher energy flow across the overbank or evidence of channel migration. At the very northern boundary of WSU the Londonderry Clay is overlain by the Quaternary Clarendon Formation composed of fluvial deposits of clay, sand and silt. At the very southwestern area of WSU the Londonderry Clay is overlain by Quaternary Agnes Banks Sand, composed of quartz sand from fluvial deposition and aeolian reworking.
Acid Sulfate Soils	NSW OEH (eSPADE 2.0) and the Australia Soil Resource Information System (ASRIS) indicate WSU Hawkesbury campus is not in an area affected by acid sulfate soils[6].
Hydrology and Drainage	Given the relatively flat nature of the site, the majority of rainfall and surface water at the site is expected to infiltrate into the unsealed soils. Rainfall in areas with higher clay content in soils are expected to form localised pooling and surface water runoff during heavier or prolonged periods of rainfall. It is noted that the site is located within the 1% annual exceedance probability (AEP) floodplain of the Hawkesbury River. In areas of hardstand, surface water is expected to flow into the onsite stormwater system[7].
Groundwater Units	Historical investigations around the CoE identified the following hydrogeological units[8]: • Perched Groundwater Zone 1 – 6 meters below grade (mbg) – encountered at variable depths below 6m within silty clayey sand lenses. Boring logs suggest saturation is not laterally extensive as it is first encountered at variable depth. Head elevation stabilises approximately 0.5 – 4 mbg. Geochemical analysis indicates the perched water is mixed type, indicative of shallow recharge from recycled irrigation water and rainfall. • Regional Groundwater Zone > 9 – 15mbg – encountered within fine sandy clay. The Perched Groundwater Zone and Regional Groundwater Zone are separated by clay. Geochemical analysis indicates the regional groundwater is sodium chloride type.
Hydraulic Gradients & Flow Direction	• Perched Groundwater Horizontal Gradient – 0.0175 – 0.023 m/m radial outward from CoE. • Regional Groundwater Horizontal Gradient – 0.0006 m/m south, east and southeast. There is a downward vertical gradient from the perched groundwater to regional groundwater[9].

[5] NSW Dept. of Minerals and Energy, *Penrith 1:100000 Sheet*, 1991.
[6] Aurecon (2023a*) Detailed Site Investigation – Campus Core Delineation, Western Sydney University (Hawkesbury Campus)*. Ref: P522692, 23 June 2023.
[7] Aurecon (n 6).
[8] Aurecon (n 6).
[9] Aurecon (n 6).

Detail	Information
Groundwater Flow Velocity Estimates	Aurecon 2023[10] conducted hydraulic tests on the perched groundwater zone and regional groundwater zone. • Perched Groundwater K Values – average 0.020 m/day. • Regional Groundwater K Values – average 0.0295 m/day. Groundwater flow estimates, adopting an effective porosity of 0.33 for fine grained sand / sandy clay loam. • Perched Groundwater Flow Velocity – 1 cm / day. • Regional Groundwater Flow Velocity – 0.005 cm/day Based on the above findings regional groundwater flow beneath the CoE is negligible (<2cm/yr). A discussion of Geo-Logix hydrogeologic findings across the broader WSU campus is discussed in Section 8.2.
Surface Water	The surface waters in proximity of WSU Hawkesbury Campus include: • Rickabys Creek - runs along south-east boundary of WSU and is catchment for the suburbs of Londonderry, Agnes Banks, Castlereagh, Cranebrook, Llandilo and Berkshire Park. Rickabys Creek discharges into the Hawkesbury River approximately 1300m northeast of the northeastern site boundary. • Cooley Creek, a tributary of Rickabys Creek, approximately 2400m north of the northern site boundary. The Hawkesbury River is 800m beyond Cooley Creek. • Hawkesbury River 1300m west of the western site boundary. There are water storage irrigation canals between site boundary and Hawkesbury River. • Rickabys Creek tributaries approximately 1500m south of southern site boundary.

3. SITE HISTORY

3.1 Summary of Site History

Site history has been summarised from Aurecon 2022[11].

Historical aerial photographs indicated:

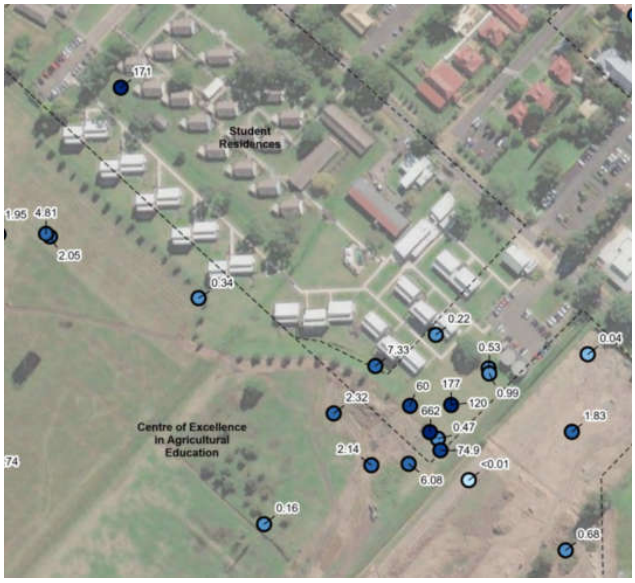
- The first historical aerial available was in 1947 where the site consisted largely of undeveloped rural and agricultural lots.
- In 1965 the RAAF Base Richmond was established to the north of site while several waterbodies, assumed to be dams, and the Richmond Water Recycling Plant are established near Blacktown Road.
- In 1975, Rock & Dirt Recycling was established to the east of the site, as well as additional dams adjacent the core WSU campus.
- In 1978, Hawkesbury City Waste Management Facility established, and residential properties in Hobartville observed.

[10] Aurecon 2023a, *Detailed Site Investigation – Campus Core Delineation, Western Sydney University (Hawkesbury Campus)*. Ref: P522692, 23 June 2023.
[11] Aurecon 2022, *Western Sydney University (Hawkesbury Campus), Environmental Site Assessment Report.* Ref: P522692, 16 December 2022.

- In 1984, a dam was established adjacent the Secret Garden & Nursery and in 1986, the student residences were established.
- Earthworks visible between 1986-1998 in northeastern corner of the broader Hawkesbury campus, extending from Blacktown Road to the Hawkesbury Valley Way.
- Exposed soil and stockpile visible south of the student residences in 2011, with spreading of the stockpile observed in 2012 as part of the construction of further student residences. PFAS has been confirmed within this fill and this is the location where the greatest concentrations of PFAS are reported in shallow groundwater.



Nearmap 8th Sept. 2012.



Sum of PFAS Concentrations in Groundwater Nov. 2022[12]

3.2 Public Databases

Aurecon[13] conducted a review of the Environmental Protection Licenses (EPL) issued by the EPA under the Protection of the Environment Operations Act 1997 (POEO Act). The review identified the following sites issued with an EPL:

- The Richmond Sewage Treatment System is located directly adjacent northeast of Westerns eastern portion boundary. The licence was issued for sewage treatment processing by small plants.
- The Hawkesbury campus site is issued with a licence for irrigation activities.
- Tasman Aviation Enterprises (Richmond) Pty Ltd on the RAAF Base, Richmond, is located to the north of the site. The EPL was issued for hazardous, industrial or Group A Waste generation or storage, metal coating, and non-thermal treatment of hazardous and other waste.

[12] Aurecon 2022, *Western Sydney University (Hawkesbury Campus), Environmental Site Assessment Report.* Ref: P522692, 16 December 2022.
[13] Aurecon (n 12).

A search of the NSW Government PFAS Investigation Program on the 23 September 2022 identified the following two PFAS sites under investigations:

- The Londonderry TestSafe & Fire and Rescue NSW, located at 667 The Northern Road, Londonderry 2753, is present approximately 6.6km south of the Hawekesbury campus. Investigations on the site identified PFAS on and off-site due to the past use of PFAS containing fire-fighting foams. It is noted that PFAS was identified in Rickabys Creek upgradient of WSU. It is understood TestSafe has constructed a retention dam and altered processes on the site to reduce PFAS impacts to the environment.
- The Richmond RAAF Base, at Middleton Avenue, Richmond NSW 2753, directly to the north of the site. Extensive investigations on the site have found PFAS in soil, sediment, surface water, groundwater, and home grown produce both on and offsite. It is noted that the inferred regional groundwater flow from this site is north towards the Hawkesbury River (i.e. away from WSU).

3.3 Historical Environmental Assessments

Historical environmental investigation reports provided to Geo-Logix are summarised in Table 4.

Table 4: Summary of Historical Environmental Investigations

Detail	Information
Detailed Site Investigation (Contamination)[14]	
Prepared by	Douglas Partners, April 2021
Objectives and Scope	The DSI was undertaken over the proposed former development site, south of the student accommodation in the main campus area. The objectives of the investigation included: • assess the general levels of soil contamination resulting from past and present activities on the site; • assess the potential for contamination migration by examining the groundwater quality on the site; • assess the suitability of the site for the proposed development; and • provide recommendations for remediation works, if required. The investigation works were carried out over a larger investigation area in 2018. In 2021, these results were reviewed in context of a smaller proposed CoE building infrastructure footprint comprising the northeast corner. The CoE investigation area is presented as Appendix A, in a figure extracted from DP 2022[15]. The works carried out for the DSI included: • review of historical documents to determine the nature of previous activities that may have occurred on the site; • site inspection; • preparation of a SAQP for the investigation; • excavation of 130 test pits across the investigation area (including five previous boreholes from preliminary investigations); • installation of six temporary groundwater monitoring wells for the assessment of groundwater quality; and

[14] Douglas Partners 2021, *Detailed Site Investigation (Contamination) Centre of Excellence in Agricultural Education (CoE), Londonderry Road, Richmond NSW*. Ref: 85644.04, April 2021.
[15] Douglas Partners 2022, *Report on PFAS Investigations, Proposed Centre of Excellence, Vines Drive, Richmond NSW*. Ref: 85644.12, September 2022.

Detail	Information
	• collection of soil and groundwater samples that were analysed for a range of identified potential contaminants.
Results	The results of the intrusive works include: • Non-friable asbestos containing materials (ACM) in fill material in southern portion of the CoE investigation area with pockets of heavy metal (lead and zinc) and benzo(a)pyrene (B(a)P) above the site assessment criteria (SAC). • Groundwater wells were installed to depths of 6m. Groundwater was identified in only one well at time of sampling. Concentrations of copper and zinc were identified above the adopted site assessment criteria, although were considered to be consistent with background concentrations.
Conclusions and Recommendations	DP concluded: • Available site history indicated the investigation area has been generally used for agricultural purposes, including tertiary education, since the late 19th century. Small areas have backfilled with demolition waste. • All exceedances of SAC were outside the smaller 2021 proposed CoE footprint and therefore was deemed suitable for the proposed former development site. It was later identified the proposed development footprint was larger than first indicated therefore the heavy metal and asbestos exceedances within the larger 2018 investigation area would need to be remediated. • The quality and depth of groundwater was not considered to hinder the former development site from a contamination perspective. Geo-Logix notes the groundwater wells were installed into shallow perched water. A groundwater sample was analysed for PFAS during this investigation, some PFAS compounds were detected at concentrations above laboratory reporting limits, but not above SAC.
Report on PFAS Investigations[16]	
Prepared by	Douglas Partners, September 2022
Objectives and Scope	It is understood additional PFAS investigation was requested by the appointed NSW EPA Accredited Site Auditor for the former development site based on the PFAS detection in groundwater. The investigation was concentrated over the proposed former development site and parts of the adjacent student accommodation. The objectives of the PFAS investigation included: • assess the PFAS contamination status of the site and suitability of the site for the proposed development site; • provide suggestions / recommendations on remedial and / or management actions that might be required to render the site suitable for the proposed development; and • assess whether the contamination constitutes a notifiable condition under Section 60 of the Contaminated Land Management Act 1997 (CLM Act, 1997). The scope of works for the PFAS investigation included: • drilling of 20 boreholes with installation of 19 shallow groundwater wells to 4 – 5 mbg, and one deep groundwater well to 20.95 mbg; • collection of soil and groundwater samples; • collection of surface water samples from drainage swales running through the former development site area and nearby dams; and • laboratory analysis of soil, groundwater and surface water samples for PFAS and other physical properties.

[16] Douglas Partners 2022, *Report on PFAS Investigations, Proposed Centre of Excellence, Vines Drive, Richmond NSW.* Ref: 85644.12, September 2022.

Detail	Information
Results	The results of the PFAS investigation include: • A fill layer (0.8m maximum) was encountered comprising silty sand to sand. Fill was underlain by natural silty sand, clayey sands and silty clays to maximum of 6mbg. Within the deeper borehole, stiff clay was encountered to 17.6mbg underlain by a water bearing silty sand to the maximum exploration depth 20.95mbg. • The direction of groundwater flow beneath the site was not conclusively established. • PFOS was detected at concentrations exceeding SAC in soils in the north-east portion of the former development site area and adjacent south-east corner of student residences to depths up to 2.6 mbg (highest 160 ug/kg at 1.5 mbg). • PFOS concentrations in shallow groundwater were identified exceeding criteria for the protection of freshwater ecosystems (99% species protection) at all locations investigated over the former development site area. Concentrations were identified highest at the south-east corner of the student residences (510 ug/L). The extent of PFAS impact to groundwater was undefined. • PFOS was detected in deeper groundwater beneath the northeast portion of former development site area exceeding criteria for the protection of freshwater ecosystems (99% species protection), however at a significantly lower concentration than the perched water (0.57 ug/L). • PFAS concentrations in surface water swales within the site were found to exceed drinking and recreational water quality criteria (Total PFHxS & PFOS) and freshwater 99% species protection ecological criteria (PFOS; highest 10 ug/L). PFOS concentrations also detected within the nearby dams exceeded the freshwater 99% species protection ecological criteria, however concentrations were considerably lower than those in the swales.
Conclusions and Recommendations	DP concluded: • The PFAS impact on the site (in soil, surface water and groundwater) was considered a notifiable condition under s60 of the CLM Act 1997. • The site was considered not suitable for the proposed CoE without remediation and/or management.
Stage 1 Environmental Site Assessment Report[17]	
Prepared by	Aurecon, December 2022
Objective and Scope	The objective of the ESA was to establish PFAS concentrations within soil, groundwater and stormwater at several distinct areas across the Hawkesubry campus and to provide recommendations for additional assessment and/or any management/remediation. The scope of works undertaken for the ESA included: • Drilling of 12 boreholes and installation groundwater monitoring wells at various depths from approximately 3 mbg to 8 mbg. • Level gauging and collection/analysis of groundwater samples from the 12 groundwater monitoring wells and 19 existing groundwater wells. • Collection of 12 surface stormwater samples from the former development site area and across the Hawekesbury campus. The investigation area and sample locations are presented in Appendix B.
Results	The results of the ESA were: • Soil exceedances of human health and ecological SAC for PFAS (Sum of PFHxs + PFOS / PFOS) were identified in soils near the student residences, and a location 200 m north-east of the residences (near HIE + School of Science Building). • The deeper regional aquifer beneath the former development site area is situated approximately 18-20 mbg. Shallow perched water has been encountered at varying depths (primarily former development site area ~1 - 5m).

[17] Aurecon 2022, *Western Sydney University (Hawkesbury Campus), Environmental Site Assessment Report*. Ref: P522692, 16 December 2022.

Detail	Information
	• Similar to the DP (2022) results, PFOS concentrations were detected above SAC 99% in perched water, primarily concentrating around the northeast corner of the former development site / southern corner of student residences. Notable concentrations were also identified in perched water 200m north near the HIE + School of Science building. • PFOS concentrations above SAC 99% were identified in surface water at the CoE. • A definitive source of PFAS had not been identified at the time of the ESA but was inferred to likely originate from fill material imported to the former development site around the 2011-2012 timeframe. This period generally predates when environmental media samples were routinely analysed for PFAS.
Conclusions and Recommendations	Based on the results of the ESA and previous DP reports, Aurecon determined there were no acute risks to human health or the environment and no immediate management or remediation required. However, the analytical data indicated that there are potentially longer-term risks to human and/or ecological receptors. Aurecon recommended: • further PFAS delineation for soil, groundwater and surface water; • consideration of alternate risk assessment derived screening values for groundwater; • collection of temporal groundwater level data from the existing and newly installed monitoring wells; • establish likely discharge points of the shallow and deep aquifers; • prepare a quantitative Human Health and Ecological Risk Assessment (HHERA) to quantify risks and develop site specific target levels (SSTLs) to guide remedial decision making; and • preparation of a Remediation Action Plan (RAP).
Stage 2 – Detailed Site Investigation – Campus Core Delineation[18]	
Prepared by	Aurecon, 23 June 2023
Objective and Scope	The objective of the Detailed Site Investigation (DSI) was to delineate PFAS concentrations across the Hawkesbury campus core (former development site and main campus surrounds) and provide recommendations for additional risk assessment and/or any management/remediation that may be required. The scope of works included: • completion of 16 shallow hand augers and 22 boreholes with collection of soil samples from each location for laboratory analysis of PFAS; • installation of 22 groundwater wells (12 shallow and 5 paired shallow/deep wells); • collection of groundwater samples from new and existing wells for laboratory analysis of PFAS; and • collection of seven stormwater samples and six sediment samples for laboratory analysis of PFAS. The investigation area and sample locations are presented in Appendix C.
Results	The results of the DSI include: • Soil analytical results identified Sum PFHxs + PFOS / PFOS concentration exceedances above human health and ecological SAC, all within the former development site and student residences area. • Elevated PFAS concentrations and exceedances of PFOS criteria were identified in shallow perched water, with the highest concentration around the north-east portion of former development site / southern corner of student residences area, northern portion of student residences, and the HIE + School of Science Building.

[18] Aurecon 2023a, *Detailed Site Investigation – Campus Core Delineation, Western Sydney University (Hawkesbury Campus)*. Ref: P522692, 23 June 2023.

Detail	Information
	• Exceedances of PFOS SAC were identified in the deeper aquifer at the former development site/student residences area only, and were similar to previous results being orders of magnitude less than identified in the shallow perched water. • Six out of seven stormwater samples exceeded the adopted SAC for PFOS. These exceedances were reported in drainage swales within and downstream of the former development site, near the student residences area and the EucFace site. • Three sediment samples exceeded the adopted SAC for PFOS, with the highest concentration reported within the student residences area.
Conclusions and Recommendations	Based on the DSI, Aurecon considered "the shallow groundwater PFAS plume was limited to the campus core boundary and western broader campus boundary and does not appear to be migrating offsite". Aurecon noted the source of PFAS had not been identified however considered it likely related to fill material imported to the former development site around 2011-2012 timeframe. Aurecon concluded based on the results from the investigations to date there were no acute risks to human health or the environment, and immediate management or remediation was not required. However, Aurecon considered there may be potentially longer-term risks to human health and/or ecological receptors. It was recognised there may be complete exposure pathways to human health and/or ecological receptors from surface soils (<1mbgl) around the student residences and via discharge to surface water. The recommendations of the DSI included: • When there is sufficient rainfall, samples of stormwater should be collected. • Alternate screening values for groundwater and stormwater should be considered. • Temporal groundwater level data should be collected from the existing and any newly installed monitoring wells. • A HHERA should be undertaken to derive SSTLs and to prepare a RAP.
Stage 3 – Environmental Site Assessment – Alternative CoE Site[19]	
Prepared by	Aurecon, June 2023
Objective and Scope	The objective of the ESA was to assess the potential for PFAS to be present in soil and groundwater at an alternative location for the CoE. The investigation area and sample locations are presented in Appendix D. The scope of works for the ESA included: • completion of borehole and collection of soil samples in 9 locations for laboratory analysis of PFAS; • installation of groundwater monitoring wells to depths of approximately 10 mbg into the deeper regional aquifer; and • collection of groundwater samples for laboratory analysis of PFAS.
Results	The results of the ESA were: • Soil samples collected did not have PFAS concentrations above the adopted SAC, with only shallow soil samples across the site containing low concentrations of PFAS. Soil samples at depth had no detectable concentrations of PFAS. • The perched aquifer present beneath the former development site did not extend beneath the new proposed CoE site. • The groundwater aquifer present was inferred to be flowing towards the east.

[19] Aurecon 2023b, *Western Sydney University (Hawkesbury Campus), Environmental Site Assessment Report. Alternative COE Site.* Ref: P522692, 30 June 2023.

Detail	Information
	• PFOS was identified exceeding SAC 99% at 1 location in the eastern corner of the investigation area (0.02 ug/L) PFAS concentrations exceeded the adopted SAC for PFOS in only one groundwater sample.
Conclusions and Recommendations	The results from the ESA provided a preliminary indication that the alternative CoE site may be suitable. Additional investigations that comply with sampling densities were recommended to establish final site suitability and to comply with any future Secretary of Environmental Assessment Requirements (SEARs) that may be issued.
Factual Letter Report – Main Sports Oval WSU Hawkesbury Campus[20]	
Prepared by	Geo-Logix, 2024
Objectives and Scope	Geo-Logix was commissioned to undertake a preliminary investigation into PFAS within the main sports oval at the Hawkesbury campus. It was understood an additional science centre was being considered for the southern portion of the main sports oval. The objective of the investigation was to provide a preliminary screening of PFAS within the development footprint, with incorporation of data from groundwater well location GW132. The investigation area and sample locations are presented in Appendix E. The scope of works included: • completion of 8 boreholes utilising a hand auger to a maximum depth of 1.5m, or natural material, whichever was encountered first; • completion of one borehole location with solid stem auger rig, and installation of groundwater monitoring well GW132 (part of broader investigation); and • collection of soil samples for laboratory analysis of PFAS.
Results Conclusions and Recommendations	Fill material (suspected imported topsoil growing medium) was encountered at all borehole locations to a maximum depth of 0.4 mbg. The underlying natural material comprised of a pinkish white silty sand, with perched water identified within this material at all sampling locations from varying depths (0.5-0.7mbg). A natural clayey gravelly sand or sandy gravelly clay with ironstone gravels was encountered under the silty sand. The stratigraphy was consistent with field observations during sampling/installation of groundwater well GW132, although perched water was not encountered at 0.7mbg within GW132, with perched water identified at 4 mbg during drilling. It was noted that recent high rainfall prior to the hand auger sampling was suspected to have resulted in perched groundwater beneath the oval. PFOS and PFOA were not detected at concentrations above the laboratory limit of detection in all samples with exception to PFOS in one fill sample (suspected imported topsoil) at location BH2 (detected above indirect ecological exposure criteria but below direct ecological exposure criteria). The sum of PFHxS and PFOS detected within the fill sample from BH2 exceeded the HIL-A (low density residential) criteria but was below the HIL-C (recreational) criteria. PFOS and PFOA were not detected at concentrations above the laboratory limit of detection in the sample of perched water from GW132. Other PFAS compounds were detected at concentrations marginally above the laboratory detection limit.

[20] Geo-Logix 2024, *Western Sydney University Oval Preliminary Investigation, WSU Hawkesbury Campus, 2 College Street, Richmond.* Letter Report 15 May 2024, 2301034eLtrRptFinalV02_15May24.

4. POTENTIAL SITE CONTAMINATION

4.1 Onsite Activities

Fill of an Unknown Origin

The suspected source of PFAS contamination is fill of unknown origin imported to the site during 2011-2012. At that time widespread testing for PFAS in imported materials was not common.

At the request of the client, the contaminants of potential concern (COPC) are limited to PFAS for this investigation.

4.2 Offsite Activities

Fire Fighting and Other Historic Site Uses Associated with PFAS

The NSW Government PFAS investigation program identified two sites within a 10km radius of the site with known PFAS contamination, RAAF Base Richmond, and TestSafe Londonderry.

PFAS contamination from the Londonderry TestSafe site has been migrating offsite in surface water via Rickabys Creek. Rickabys Creek forms the eastern site boundary. If present, PFAS contamination in Rickabys Creek surface water would not impact upon WSU.

PFAS contamination has been identified in groundwater beneath the RAAF base. Groundwater beneath the RAAF base flows away from the Hawkesbury campus and is therefore not considered an offsite source of contamination.

5. DATA QUALITY OBJECTIVES

In determining the quality of data needed to achieve the objective in assessing the site for the presence of PFAS contamination, Geo-Logix has undertaken the seven-step process to develop the Data Quality Objectives (DQOs) in accordance with Appendix B Schedule of the National Environment Protection Measure 1999 (NEPM, amended 2013).

Step 1: State the problem.

PFAS contamination has been identified in limited areas of the former development site in soil, groundwater, and surface water. There is possibility for PFAS to be present across the broader Hawkesbury Campus which may present a problem for existing and/or future landuses.

Step 2: Identify the decisions/goals of the study.

The goal of the study was to establish if PFAS contamination is present in environmental media (soil, groundwater or surface water) across the broader Hawkesbury campus.

Step 3: Identify study inputs.

Study inputs are outlined in Table 5.

Table 5: DQO Study Inputs

Media	Input
Soil	• borehole sampling from locations predetermined by WSU • soil logging • soil laboratory analytical data • comparison of soil analytical data against SAC
Groundwater	• installation of 76 groundwater wells • well elevation survey • groundwater gauging • groundwater sampling data • groundwater sample laboratory analysis • comparison of groundwater analytical data against SAC
Surface Water	• surface water sampling from locations predetermined by WSU • surface water sampling field data • surface water sample laboratory analysis • comparison of surface water analytical data against SAC.

Step 4: Define the boundaries of the site.

The lateral boundary of the study is presented in Figure 1, approximately 14km^2. The vertical boundary of the study is the maximum depth explored (approximately 18mbg). The temporal boundary of the study is limited to the dates of sampling.

Step 5: Study decision

PFAS was detected in environmental media at a concentration in excess of SAC.

Step 6: Specify acceptable limits on decision errors.

The study decisions are not probability-based decisions, they are based on maximum values. Therefore, the acceptable limit for making decision errors cannot be quantified to a statistical level of significance, the maximum value approach is typically conservative where there is adequate sampling frequency.

Sampling and measurement error are referred to as ‘total study error’. Total study error is minimised by the following actions:

- implementing accepted sample collection, preservation and transportation methods in accordance with NEPM or other international guidance documents;
- implementing acceptable Data Quality Indicators (DQIs) for precision, accuracy, representativeness, comparability, completeness as defined by NEPM; and
- implementing robust field and laboratory Quality Control/Quality Assurance (QA/QC) procedures in accordance with NEPM and AS 4482.1–2005.

Step 7: Optimise the design for obtaining data.

It is noted that Western provided pre-determined sample locations for this investigation. In some instances, the sample locations were relocated for data optimisation.

6. SITE ASSESSMENT CRITERIA

Human health and ecological guideline values (SAC) have been adopted from the PFAS NEMP 2.0[21] (Table 5). The PFAS NEMP 2.0 specifies SAC for only three PFAS compounds: PFOS, PFOA, and PFHxS. Where these criteria are exceeded, they are depicted in site figures. Although the sum of all PFAS compounds (Total PFAS) has also been considered, their distribution in the figures is intended solely to illustrate the presence and concentration of PFAS detections.

Table 6: Site Assessment Criteria

Matrix	Comment
Soil	PFAS NEMP 2.0 outlines the Human Health Investigation Levels (HIL) for differing land use scenarios. The most conservative Tier 1 SAC, HILs- A Low Density Residential Land Use has been adopted to enable WSU to consider the widest variety of land uses for future planning within the investigation area.
	PFAS NEMP 2.0 outlines the Ecological Guideline Values for soil based on either direct or indirect exposure to PFAS. The most conservative Tier 1 SAC, the ecological indirect exposure limit, has been adopted to enable WSU to consider the widest variety of land uses for future planning within the investigation area.
Groundwater	PFAS NEMP 2.0 does not provide groundwater quality criteria. The Australian Water Quality Guidelines[22] provides species protection guideline values that are protective of differing proportions of aquatic species, ranging from 80% – 99%. Typically, the 95% species protection values are adopted for assessment of groundwater, noting that their application is conservative and only applies at the point of groundwater discharge into the receiving water. The 99% protection value is applied to assess toxicity and bioaccumulation in high conservation ecosystems or when assessing bioaccumulation in slightly to moderately disturbed ecosystems. PFOS and PFOA bioaccumulate and therefore the 99% protection values may be relevant at the point of groundwater discharge into the environment. The 95% species protection values have been adopted as assessment criteria for groundwater at this time. Further assessment of the 99% value will be undertaken if there is evidence PFAS contaminated groundwater may discharge into nearby surface waters.
Surface Water	Hawkesbury campus's water storage ponds are not considered significant contributors to catchment ecosystem. On that basis the 95% species protection values are considered appropriate surface water assessment criteria.

6.1 Analytical Suite

The analytical suite for the project is outlined in Table 6.

Table 7: Analytical Suite

Media	Sample Type	Sample Number	Analytical Suite
Soil	Primary	155	30 PFAS analytical suite.
	Field Duplicate	12	

[21] HEPA 2020, *PFAS National Environmental Management Plan NEMP Version 2.0*, National Chemicals Working Group of the Heads of EPAs Australia and New Zealand, January 2020.
[22] ANZG 2018, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. Available at www.waterquality.gov.au/anz-guidelines

Media	Sample Type	Sample Number	Analytical Suite
	Field Triplicate	12	
	Equipment Rinsate	16	
	Field Reagent Blank	8	
Groundwater	Primary	81*	
	Field Duplicate	6	
	Field Triplicate	6	
	Equipment Rinsate	21	
	Field Reagent Blank	6	
Surface Water	Primary	13	
	Field Duplicate	1	
	Field Triplicate	1	
	Field Reagent Blank	3	

Field duplicate = intra-laboratory duplicate

Field triplicate = inter-laboratory duplicate

* includes 7 wells re-sampled (Section 8.9)

7. INVESTIGATION METHODOLOGIES

Fieldworks were conducted between 21 August 2023 to 17 April 2024. Sample locations are provided in Figure 3. The project Sampling Analysis Quality Plan is provided in Appendix F.

7.1 Sampling Analysis Plan

Preparatory Works

- Preparation of a site-specific health, safety and environment plan and sampling plan for field-based work.
- Underground Utility Service Clearance to confirm proposed sampling locations. The presence of underground services and accessibility resulted in some sample locations being moved.

Soil Investigation

The scope of work comprised the following:

- Soil sampling during installation of the 76 groundwater monitoring wells (GW101-GW176).
- At each location, both shallow (~0.5 mbg) and deeper soils (~1.5 mbg) were collected for PFAS analysis.

Groundwater Investigation

- All 76 boreholes (GW101-GW176) were converted into groundwater monitoring wells to a maximum depth of 18 mbg.
- A groundwater sample from each bore was collected utilising Hydrasleeves
- A groundwater sample from each well was analysed for PFAS

Surface Water Investigation

- Surface water grab samples were collected from thirteen dams across the site
- All samples were analysed for PFAS.

7.2 Soil Sampling Methodology

A total of 155 soil samples were collected from the investigation area. Soil borings located in the vicinity to underground services were initially advanced via hand auger to ~1.0 mbg. Soil borings were otherwise advanced using a truck or ute mounted drill rig equipped with solid stem augers to depths between 4 and 18 mbg.

Soil samples were collected directly from the augers using fresh nitrile gloves, placed in laboratory prepared HDPE jars, labelled and placed on ice in an esky for transport under chain of custody to a NATA Accredited Laboratory (Eurofins) for PFAS analysis. Quality Control procedures are discussed in Section 8.9.

7.3 Groundwater Well Installation and Sampling

Groundwater wells were installed in accordance with the *Minimum Construction Requirements for Water Bores in Australia*[23]. Groundwater samples were collected in accordance with recommended procedures outlined in the PFAS NEMP V2.0[24].

Groundwater wells were constructed of Class 18 50mm PVC pipe with slotted PVC casing 3m in length installed to depths between 4 to 18mbg. Some shallow wells (4mbg) were installed with 2m screens. A sand filter pack was extended from the base of the borings to approximately 0.5m above the top of the slotted PVC casing and was sealed with at least 1m of hydrated bentonite pellets above the sand pack. A cement grout was used to seal the borehole annulus to the surface. The majority of monitoring wells were constructed with an approximate 800m length of PVC pipe extending from the ground surface and finished with galvanised steel monuments. Some monitoring wells closer to the centre of campus with high foot traffic were cut below the groundwater surface and finished with a bolted gatic cover. Soil borelogs and construction details are presented in Appendix G.

Following installation, the wells were developed by surging and purging using a disposable bailer to remove three well volumes or until dry. All well development logs are provided in Appendix H.

Groundwater samples were collected in stages throughout the period 13 September 2023 to 3 April 2024, at least seven days following well development, in accordance with the Hydrasleeve methodology outlined in the SAQP. Samples were collected directly from the Hydrasleeve, a subsample was utilised for water

[23] NUDLC 2020, *Minimum Construction Requirements for Water Bores in Australia* Edition 4, National Uniform Drillers Licensing Committee, Revised February 2020.
[24] HEPA 2020, *PFAS National Environmental Management Plan NEMP Version 2.0*, National Chemicals Working Group of the Heads of EPAs Australia and New Zealand, January 2020.

quality parameters measurement including pH, dissolved oxygen, conductivity, redox potential, and temperature. Groundwater sample logs are presented in Appendix I. Calibration certificates for water quality meters used are presented in Appendix J.

Groundwater samples were collected in a 500mL PET/HDPE bottle, labelled and placed on ice in an esky for transport under chain of custody conditions to a NATA Accredited Laboratory (Eurofins) for PFAS analysis.

Quality Control procedures are discussed in Section 8.9.

7.4 Surface Water Sample Methodology

A total of thirteen surface water samples (DW1-DW13) were collected between 13 September 2023 and 17 April 2024 (Figure 3). Surface water samples were collected from water storage ponds on Hawkesbury campus that make up the Western's stormwater harvesting and water recycling scheme (See below Table 7).

Grab surface water samples were collected utilising an extendable pole with a 600mL unpreserved HDPE sample bottle attached at each location. The sample vessel was changed at each sampling location. Water quality parameters were measured at each sampling location.

Surface water sampling sheets are provided in Attachment K. Quality Control procedures are discussed in Section 8.9.

Table 8: Surface Water Samples

Sample ID	Latitude	Longitude	Name	Comments
DW1	33°36'09.22"S	150°44'02.39"E		Small un-named dam in corner of Southee and Castlereagh Rds.
DW2	33°36'23.63"S	150°44'10.09"E	Yarramundi Dam	
DW3	33°37'03.21"S	150°45'39.66"E	Hillside Dam	
DW4	33°37'12.87"S	140°45'07.51"E	Horticultural Dam	
DW5	33°36'37.97"S	150°45'34.84"E	Tafe Dam	
DW6	33°36'36.82"S	150°45'47.99"E	Turkey Nest Dam	
DW7	33°36'36.43"S	150°45'53.22"E		Richmond stormwater detention dam
DW8	33°36'42.82"S	150°46'25.57"E		Historical stock watering dam
DW9	33°36'57.95"S	150°46'20.17"E		Richmond stormwater detention dam
DW10	33°36'44.78"S	150°46'26.43"E		Stormwater treatment wetlands
DW11	33°36'52.19"S	150°46'28.69"E		Stormwater treatment wetlands
DW12	33°36'57.30"S	150°46'40.68"E	Lindsey Dam	
DW13	33°37'48.64"S	150°47'48.64"E		Historical stock watering dam

7.5 Quality Assurance Procedures

The collection, handling and processing of samples was generally conducted in line with the SAQP and PFAS NEMP 2.0[25]. To minimise the risk of cross contamination between sample locations the following was conducted:

- High pressure washing of solid stem augers with municipal tap water. Two quality control samples of municipal tap water were collected and analysed for PFAS, results are discussed in Section 8.9;
- The groundwater interface probe was triple rinsed between sample locations. The triple rinse included rinsing in a liquinox water mix followed by two stage rinsing with laboratory prepared deionised PFAS free rinsate water. Quality control samples were collected off the cleaned interface probe to assess the adequacy of the decontamination procedure.
- All other sampling equipment was single use.
- Changing disposable gloves between samples. Ensuring hands were cleaned prior to putting on gloves.
- Use of PFAS "safe" products including HDPE hydrasleeves, PVC bailers and polypropylene bailer cord. Zip-ties used to attach metallic weights to the hydrasleeves were supplied with the HDPE hydrasleeves and understood to have been laboratory tested by the supplier as PFAS free.
- Use of ball point pens to label samples and avoiding the use of sharpies.
- Use of ice to chill samples and not resuable freezer blocks.

Risk of cross contamination and deviations from the SAQP are discussed further in Section 8.9.

7.6 Quality Control

Quality control (QC) sampling was undertaken in general accordance with specifications outlined in AS4482.1, *Guide to Sampling and Investigation of Potentially Contaminated Soil*[26]. Field QC samples were collected and included the following:

Table 9: Quality Control Samples

Sample ID	Date	Sample Type	Sample Matrix	Rate of Collection
Soil QC samples				
DS1	22/08/2023	Field duplicate of GX103/1.1-1.2	Soil	1 in 11.9 samples
TS1	22/08/2023	Field triplicate of GX103/1.1-1.2	Soil	
DS2	23/08/2023	Field duplicate of GX104/0.1-0.2	Soil	
TS2	23/08/2023	Field triplicate of GX104/0.1-0.2	Soil	

[25] HEPA 2020, *PFAS National Environmental Management Plan NEMP Version 2.0*, National Chemicals Working Group of the Heads of EPAs Australia and New Zealand, January 2020.
[26] Australian Standard AS4482.1 – 2005, Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds. Standards Australia.

Sample ID	Date	Sample Type	Sample Matrix	Rate of Collection
DS1b	19/10/2023	Field duplicate of GX117/0.3-0.4	Soil	
TS1b	19/10/2023	Field triplicate of GX117/0.3-0.4	Soil	
DS2b	20/10/2023	Field duplicate of GX118/1.0-1.1	Soil	
TS2b	20/10/2023	Field triplicate of GX118/1.0-1.1	Soil	
DS3b	23/10/2023	Field duplicate of GX121/0.4-0.5	Soil	
TS3b	23/10/2023	Field triplicate of GX121/0.4-0.5	Soil	
DS4b	24/10/2023	Field duplicate of GX123/0.4-0.5	Soil	
TS4b	24/10/2023	Field triplicate of GX123/0.4-0.5	Soil	
DS5b	23/11/2023	Field duplicate of GX135/0.4-0.5	Soil	
TS5b	23/11/2023	Field triplicate of GX135/0.4-0.5	Soil	
DS7b	9/01/2024	Field duplicate of GX156/0.4-0.5	Soil	
TS7b	9/01/2024	Field triplicate of GX156/0.4-0.5	Soil	
DS9b	22/01/2024	Field duplicate of GX163/0.4-0.5	Soil	
TS9b	22/01/2024	Field triplicate of GX163/0.4-0.5	Soil	
DS1C	29/01/2024	Field duplicate of GX172/1.4-1.5	Soil	
TS1C	29/01/2024	Field triplicate of GX172/1.4-1.5	Soil	
DS3C	26/02/2024	Field duplicate of GX173/0.4-0.5	Soil	
TS3C	26/02/2024	Field triplicate of GX173/0.4-0.5	Soil	
DS4C	27/02/2024	Field duplicate of GX170/1.4-1.5	Soil	
TS4C	27/02/2024	Field triplicate of GX170/1.4-1.5	Soil	
DS5C	25/03/2024	Field duplicate of GX171/0.4-0.5	Soil	
TS5C	25/03/2024	Field triplicate of GX171/0.4-0.5	Soil	
R1	21/08/2023	Equipment rinsate sample	Water	1 per day (approx..)
R3	23/08/2023	Equipment rinsate sample	Water	1 per day (approx..)
R5	25/08/2023	Equipment rinsate sample	Water	1 per day (approx..)
R6	28/08/2023	Equipment rinsate sample	Water	1 per day (approx..)
R1	19/10/2023	Equipment rinsate sample	Water	1 per day (approx..)
R9	2/11/2023	Equipment rinsate sample	Water	1 per day (approx..)
R2	24/11/2023	Equipment rinsate sample	Water	1 per day (approx..)
R5	29/11/2023	Equipment rinsate sample	Water	1 per day (approx..)
R101	22/01/2024	Equipment rinsate sample	Water	1 per day (approx..)
R4	30/01/2024	Equipment rinsate sample	Water	1 per day (approx..)
R1	24/01/2024	Equipment rinsate sample	Water	1 per day (approx..)
R2	29/01/2024	Equipment rinsate sample	Water	1 per day (approx..)
R5	26/02/2024	Equipment rinsate sample	Water	1 per day (approx..)
R8	27/02/2024	Equipment rinsate sample	Water	1 per day (approx..)
R9	27/02/2024	Equipment rinsate sample	Water	1 per day (approx..)

Sample ID	Date	Sample Type	Sample Matrix	Rate of Collection
RW10	25/03/2024	Equipment rinsate sample	Water	1 per day (approx..)
FBR2	28/08/2023	Field reagent blank sample	Water	1 per batch
FRB1	19/10/2023	Field reagent blank sample	Water	1 per batch
BLANK	22/11/2023	Field reagent blank sample	Water	1 per batch
BLANK3	8/01/2024	Field reagent blank sample	Water	1 per batch
BLANK	30/01/2024	Field reagent blank sample	Water	1 per batch
BLANK22/01	22/01/2024	Field reagent blank sample	Water	1 per batch
BLANK30/01	30/01/2024	Field reagent blank sample	Water	1 per batch
BLANK27/02	27/02/2024	Field reagent blank sample	Water	1 per batch
Groundwater QC Samples				
DS1	13/09/2023	Field duplicate of GW101	Water	1 in 13.5 samples
TS1	13/09/2023	Field triplicate of GW101	Water	
DGW1b	10/11/2023	Field duplicate of GW118	Water	
TGW1b	10/11/2023	Field triplicate of GW118	Water	
DS2b	11/12/2023	Field duplicate of GW139	Water	
TS2b	11/12/2023	Field triplicate of GW139	Water	
DW3b	23/01/2024	Field duplicate of GW150	Water	
TW3b	23/01/2024	Field triplicate of GW150	Water	
DW4b	21/03/2024	Field duplicate of GW151	Water	
TW4b	21/03/2024	Field triplicate of GW151	Water	
DW1	2/04/2024	Field duplicate of GW166	Water	
TW1	2/04/2024	Field triplicate of GW166	Water	
R4	24/08/2023	Equipment rinsate sample	Water	1 per day (approx..)
R8	30/08/2023	Equipment rinsate sample	Water	1 per day (approx..)
R9	31/08/2023	Equipment rinsate sample	Water	1 per day (approx..)
R3	24/10/2023	Equipment rinsate sample	Water	1 per day (approx..)
R4	25/10/2023	Equipment rinsate sample	Water	1 per day (approx..)
R5	30/10/2023	Equipment rinsate sample	Water	1 per day (approx..)
R6	31/10/2023	Equipment rinsate sample	Water	1 per day (approx..)
R7	1/11/2023	Equipment rinsate sample	Water	1 per day (approx..)
R1	10/11/2023	Equipment rinsate sample	Water	1 per day (approx..)
R2	13/11/2023	Equipment rinsate sample	Water	1 per day (approx..)
R1	11/12/2023	Equipment rinsate sample	Water	1 per day (approx..)
R2	12/12/2023	Equipment rinsate sample	Water	1 per day (approx..)
R3	23/01/2024	Equipment rinsate sample	Water	1 per day (approx..)
RW4	21/03/2024	Equipment rinsate sample	Water	1 per day (approx..)
RW5	22/03/2024	Equipment rinsate sample	Water	1 per day (approx..)

Sample ID	Date	Sample Type	Sample Matrix	Rate of Collection
R3	29/01/2024	Equipment rinsate sample	Water	1 per day (approx..)
R6	26/02/2024	Equipment rinsate sample	Water	1 per day (approx..)
R7	27/02/2024	Equipment rinsate sample	Water	1 per day (approx..)
RW1	2/04/2024	Equipment rinsate sample	Water	1 per day (approx..)
RW2	02/04/2024	Equipment rinsate sample	Water	1 per day (approx..)
RW3	03/04/2024	Equipment rinsate sample	Water	1 per day (approx..)
FBR1	13/09/2023	Field reagent blank sample	Water	1 per batch
FRB1	10/11/2023	Field reagent blank sample	Water	1 per batch
FRB1	11/12/2023	Field reagent blank sample	Water	1 per batch
BLANK2	22/01/2024	Field reagent blank sample	Water	1 per batch
BLANK3	21/03/2024	Field reagent blank sample	Water	1 per batch
BLANK	02/04/2024	Field reagent blank sample	Water	1 per batch
Surface Water QC Samples				
DW2	17/04/2024	Field duplicate of DW13	Water	1 in 13 samples
TW2	17/04/2024	Field triplicate of DW13	Water	
FBR1	13/09/2023	Field reagent blank (groundwater and surface water)	Water	1 per sampling round
FRB1	10/11/2023	Field reagent blank sample	Water	1 per batch
FRB1	11/12/2023	Field reagent blank sample	Water	1 per batch

Note – Rate of QC sample collection specified as 1 in 20 samples in AS4482.1

The laboratory internal QC procedures are consistent with NEPM policy on laboratory analysis of environmental samples.

Soil equipment rinsate samples were collected from the decontaminated drill augers while groundwater equipment rinsate samples were collected from the decontaminated interface probe during both well development and groundwater sampling.

7.7 Well Decommissioning

At the request of Western, the following wells were decommissioned:

- GW130, GW132 and GW149 on 15 December 2023;
- GW108 on 25 March 2024; and
- GW106 and GW107 on 26 March 2024.

Wells were decommissioned by drilling out the first 1m of well casing and filling the bore with cement grout from the base of well to just below the ground surface. Surrounding soil was used to finish the decommissioned bore to grade.

8. INVESTIGATION RESULTS

8.1 Site Geology

Fill material was encountered at five locations to a maximum depth of 0.4 mbg within the main campus at the following locations:

- GW128 – road base.
- GW130 – soccer pitch: clayey sand, reddish grey, medium grained.
- GW132 – main oval: sand, reddish grey, medium grained.
- GW158 – nursery garden path: crushed sandstone below gravelled walking track.
- GW163 – adjacent to soccer pitch: gravelly sand and sandy gravel, brown, medium to coarse sized gravels.

The geology across the site is consistent with an upper layer of brown natural silty sand / clayey silt to depths around 0.8 mbg.

Londonderry Clay geology is consistent to a maximum explored depth of 18 mbg. The predominant geology is clay interbedded with sandy clay with varying percentage of fine – medium sand. At few locations shallow groundwater is perched within sandier lenses. These sandier lenses are localised and presumably pinch and swell throughout the Londonderry Clay as evidence of channel migration or higher energy depositional events. Perching of shallow groundwater is most prominent around the former development site and campus grounds and likely a result of irrigation.

A drilling photolog is provided in Appendix L.

8.2 Site Hydrogeology

Two hydrogeological units were encountered across Hawkesbury campus, a hydrogeological section is presented as Figure 4. Groundwater gauging data is present in Table 11, groundwater quality parameters are presented in Table 12. Well survey data is presented in Appendix M.

A summary of hydrogeological units is presented below; Table 9 – Shallow Groundwater and Table 10 – Regional Groundwater (Figure 5 – groundwater elevation map).

Table 10: Shallow Groundwater

PERCHED GROUNDWATER SYSTEM	
Discontinuous zones of saturation 0.9 – 4mbg within sandier clay lenses of the Londonderry Clay. Predominantly encountered beneath the main campus grounds GW130, GW131, GW132, GW163. Intermittent encounters near the western boundary (GW112), northern boundary (GW166) and centrally (GW137, GW119). Likely seasonal.	
Water Quality Characteristics	
Electrical Conductivity	Fresh to brackish
Hydrogeological Characteristics	
Groundwater Gradient	Undetermined
Flow Direction	Undetermined

Table 11: Regional Groundwater

REGIONAL GROUNDWATER SYSTEM	
The primary aquifer for solute transport to surface water receptors. A zone of continuous saturation within the Londonderry Clay encountered between 7 – 15 mbg.	
Water Quality Characteristics	
Electrical Conductivity	Brackish
Hydrogeological Characteristics	
Groundwater Flow Direction	A NE-SW trending groundwater divide exists beneath the western portion of the site. West of the divide groundwater flows NW towards the Hawkesbury River. East of the divide, the predominant groundwater flow direction beneath WSU, groundwater flows east - south east towards Rickabys Creek
Groundwater Gradient	West of the divide groundwater gradient = 0.001 A gradual steeping of the gradient east of the divide from 0.0008 beneath the central portion of WSU to 0.002 towards the eastern property boundary.
Hydraulic Conductivity	Hydrogeological tests performed by Aurecon (2023)[27] indicate an average K value of 0.0295 m/day
Seepage Velocity	Assuming an effective porosity of 33% and gradient of 0.0006, Aurecon estimates the groundwater flow rate to be 5.36 x 10^{-5} m/day (equivalent to 2cm movement per year).

Table 12: Groundwater Elevation Data

Well ID	Well Cover	Top of Casing (mAHD)	Total Depth of Well (mbg)	Water first encountered in drilling (mbg)	Stabilised Depth to Groundwater (mBTOC)*	Stabilised Depth to Water (mbg)^	Groundwater Elevation (mAHD)
GW101	M	21.929	11.7	9.8	10.571	9.771	11.358
GW102	M	25.256	13.2	11.5	12.536	11.736	12.720
GW103	M	25.836	15	14	14.262	13.462	11.574
GW104	M	22.925	14	12	12.179	11.379	10.746
GW105	M	23.277	14.5	14	11.432	10.632	11.845
GW106[b]	M	20.795	13	11.5	10.553	9.753	10.242
GW107[b]	M	24.219	16	14	13.213	12.413	11.006
GW108[b]	M	22.800	13.5	11.5	12.061	11.261	10.739
GW109	M	23.412	15	13	13.946	13.146	9.466
GW110	M	24.084	14	12	12.535	11.735	11.549
GW111	M	25.614	15.5	14	14.225	13.425	11.389
GW112	M	26.377	5	3	3.564	2.764	22.813

[27] Aurecon 2023a, *Detailed Site Investigation – Campus Core Delineation, Western Sydney University (Hawkesbury Campus)*. Ref: P522692, 23 June 2023.

Well ID	Well Cover	Top of Casing (mAHD)	Total Depth of Well (mbg)	Water first encountered in drilling (mbg)	Stabilised Depth to Groundwater (mBTOC)*	Stabilised Depth to Water (mbg)^	Groundwater Elevation (mAHD)
GW113	M	22.331	14	12	11.403	10.603	10.928
GW114	M	23.612	15	13.5	13.505	12.705	10.107
GW115	M	24.478	12.5	10.5	11.619	10.819	12.859
GW116	M	22.282	16	14.2	12.882	12.082	9.400
GW117	M	22.371	14.5	13	13.302	12.502	9.069
GW118	M	21.108	14.2	13	12.046	11.246	9.062
GW119	M	18.498	5.2	3	4.122	3.322	14.376
GW120	M	22.667	15	--	13.445	12.645	9.222
GW121	M	21.432	13.8	12.2	12.214	11.414	9.218
GW122	M	22.180	13.3	11.5	12.755	11.955	9.425
GW123	M	22.984	14.8	12	13.429	12.629	9.555
GW124	M	18.325	9.5	6.5	8.040	7.240	10.285
GW125	M	17.506	8.5	6.5	7.091	6.291	10.415
GW126	G	23.629	17.8	--	13.066	13.152	10.563
GW127	G	23.535	17.8	--	12.941	13.046	10.594
GW128	G	22.702	14.9	13	12.571	12.673	10.131
GW129	G	22.632	14.4	12.5	12.590	12.696	10.042
GW130[b]	G	22.620	6	3.95	2.619[a]	2.771	20.001
GW131	G	22.590	4	2.5	1.192	1.262	21.398
GW132[b]	G	23.110	5.5	4	0.979[a]	1.079	22.131
GW133	G	23.940	15	13	12.540	12.645	11.400
GW134	G	23.933	15	14.5	13.302	13.374	10.631
GW135	M	19.699	15	13.6	9.787	8.987	9.912
GW136	M	23.224	13.7	11	13.517	12.717	9.707
GW137	M	22.509	4	1.2	3.410	2.610	19.099
GW138	M	21.975	12	10	12.413	11.613	9.562
GW139	G	24.204	14.8	13.5	12.881	12.968	11.323
GW140	G	23.926	14.7	13.5	12.537	12.618	11.389
GW141	M	23.240	14.8	13.2	13.289	12.489	9.951
GW142	M	22.690	14.5	13	13.136	12.336	9.554
GW143	G	24.030	14.8	13	12.278	12.378[#]	11.752

Well ID	Well Cover	Top of Casing (mAHD)	Total Depth of Well (mbg)	Water first encountered in drilling (mbg)	Stabilised Depth to Groundwater (mBTOC)*	Stabilised Depth to Water (mbg)^	Groundwater Elevation (mAHD)
GW144	M	19.566	10	n/a	9.049	8.249	10.517
GW145	M	18.851	12.4	n/a	8.479	7.679	10.372
GW146	M	18.327	8.8	7.5	7.950	7.150	10.377
GW147	M	23.580	14.8	13	13.654	12.854	9.926
GW148	M	23.197	15	13	13.626	12.826	9.571
GW149[b]	M	17.98	9	7	n/a – decommissioned		
GW150	M	17.650	11.3	10	7.475	6.675	10.175
GW151	M	21.720	14.8	13.5	12.248	11.448	9.472
GW152	M	17.722	10.2	9	7.557	6.757	10.165
GW153	M	23.911	16.1	13	13.768	12.968	10.143
GW154	M	23.185	5	3.5	n/a - dry		
GW155	M	23.502	15	13	13.367	12.567	10.135
GW156	M	20.165	12	10	9.839	9.039	10.326
GW157	M	21.027	16	14.5	11.697	10.897	9.330
GW158	G	22.620	15	12.5	12.842	12.930	9.778
GW159	G	22.338	14.8	13	12.546	12.613	9.792
GW160	M	22.591	15	13.5	13.179	12.379	9.412
GW161	M	22.438	16	13.5	13.095	12.295	9.343
GW162	M	19.394	13.4	10.5	11.353	10.553	8.041
GW163	G	22.495	5	0.9	1.980	2.072	20.515
GW164	M	17.983	9	7.5	8.536	7.736	9.447
GW165	M	19.872	13	12	10.383	9.583	9.489
GW166	M	20.033	6	4	3.588	2.788	16.445
GW167	M	15.967	8.5	6.5	7.395	6.595	8.572
GW168	M	16.113	8	5.5	7.287	6.487	8.826
GW169	M	15.89	7.5	5	6.881	6.081	9.009
GW170	M	15.99	10.5	8	6.225	5.425	9.765
GW171	M	15.575	10.5	9.6	6.909	6.109	8.666
GW172	M	16.64	9	7	7.892	7.092	8.748
GW173	G	17.386	13.7	10.5	8.747	8.784	8.639
GW174	G	17.295	14.3	12.5	10.074	10.098	7.221

Well ID	Well Cover	Top of Casing (mAHD)	Total Depth of Well (mbg)	Water first encountered in drilling (mbg)	Stabilised Depth to Groundwater (mBTOC)*	Stabilised Depth to Water (mbg)^	Groundwater Elevation (mAHD)
GW175	M	16.104	13.5	11.5	8.820	8.020	7.284
GW176	M	13.155	8	6	6.427	5.627	6.728

M = monument G = Gatic
* Stabilised DTW mTOC for Western Portion monitoring wells measured on 13/09/2023; Central Portion monitoring wells measured on 3/4/2024; Eastern Portion monitoring wells measured on 2/4/2024 to 3/4/2024
a = DTW measured 13/11/23 with well subsequently decomissioned
^ Stabilised DTW mbg calculated assuming an approximate 800mm stickup from ground surface for wells with monument covers; for gatic covers by adding the difference between surveyed RL mAHD from TOC and LID.
# Stabilised DTW mbg calculated assuming ground surface is 100mm above TOC
Highlighted Blue = wells considered screened into shallow perched water
-- = not observed or recorded
b = decommissioned well

Table 13: Groundwater Physical Parameters

Well	EC (ms/cm)	TDS* (ppm)	pH	Redox (mV)	DO (mg/L)	Temp (°C)
Western Portion monitoring wells						
GW101	0.502	321	5.81	251.4	5.40	20.7
GW102	0.004	2.56	6.07	230.3	6.50	21.6
GW103	0.65	416	4.88	266.1	4.52	21.9
GW104	0.58	371	6.54	257.1	3.95	19.9
GW105	0.295	189	5.49	271.5	4.36	20.7
GW106	1.02	653	5.29	201.4	3.58	18.9
GW107	1.04	665	5.82	109.7	5.36	19.3
GW108	0.371	237	5.08	245.6	5.48	19.7
GW109	4.47	2,860	6.02	142.1	5.89	20.1
GW110	5.91	3,780	5.59	242.4	5.34	19.8
GW111	0.371	270	5.72	249.6	3.09	20.8
GW112	0.258	165	5.82	259.2	2.93	18.0
GW113	0.91	582	5.91	260.5	4.22	20.4
GW114	3.18	2,030	6.38	270.3	5.32	20.4
GW115	0.266	170	4.82	281.0	5.08	19.0
Central Portion monitoring wells						
GW116	4.36	2790	6.5	143.0	2.52	20.1
GW117	12.32	7885	6.03	224.4	4.36	21.4
GW118	10.86	6950	6.27	171.6	4.70	20.5

Well	EC (ms/cm)	TDS* (ppm)	pH	Redox (mV)	DO (mg/L)	Temp (°C)
GW119	0.73	467	4.80	220.4	5.77	18.9
GW120	2.539	1625	6.85	-125.1	1.56	19.8
GW121	6.92	4429	6.93	163.0	3.57	21.8
GW122	6.49	4154	4.61	203.7	4.13	20.4
GW123	3.40	2176	6.37	166.2	2.91	21.0
GW124	1.25	800	6.21	158.2	5.66	19.6
GW125	1.07	685	5.82	139.2	5.52	18.3
GW126	2.36	1510	5.43	214.7	2.61	20.8
GW127	0.163	104	5.17	172.1	3.97	20.9
GW128	0.489	313	5.60	162.7	2.29	19.5
GW129	5.60	3584	5.28	193.3	2.95	19.9
GW130	0.63	403	5.62	167.1	5.29	19.0
GW131	1.70	1088	5.93	141.2	5.16	18.4
GW132	1.54	986	5.73	171.1	5.33	19.7
GW133	0.143	92	5.46	169.5	4.85	21.3
GW134	0.362	232	5.77	168.0	1.90	20.3
GW135	2.15	1376	6.77	56.5	4.38	19.8
GW136	3.06	1958	6.53	71.6	5.95	23.4
GW137	1.68	1075	6.81	103.2	4.55	21.3
GW138	n/a – not enough sample retrieved to measure water quality parameters					
GW139	0.32	205	5.63	96.6	3.09	22.3
GW140	0.55	352	5.58	97.5	5.07	22.7
GW141	3.41	2182	6.17	96.0	0.87	21.4
GW142	2.971	1901	5.75	178.2	4.22	18.9
GW143	0.367	235	6.02	93.2	2.50	21.8
GW144	0.87	557	6.46	93.8	1.62	20.6
GW145	0.234	150	5.10	86.9	7.50	20.8
GW146	2.20	1408	6.81	90.4	4.26	21.0
GW147	8.08	5171	5.69	49.2	3.84	20.2
GW148	5.75	3680	6.46	67.6	4.36	19.5
GW149	n/a – well decommissioned before sampled					
GW150	3.849	2463	7.05	77.3	4.19	21.1

Well	EC (ms/cm)	TDS* (ppm)	pH	Redox (mV)	DO (mg/L)	Temp (°C)
GW151	3.416	2186	6.36	86.4	1.63	20.3
GW152	2.022	1294	6.95	91.4	2.51	21.1
GW153	8.740	5594	6.02	79.4	1.85	20.3
GW154	n/a - dry					
GW155	6.218	3980	6.39	106.9	1.18	20.5
GW156	0.901	577	6.33	96.4	2.51	21.4
GW157	1.809	1158	6.34	78.7	1.41	21.4
GW158	4.656	2980	6.03	174.7	2.67	19.4
GW159	2.29	1466	6.23	45.0	1.61	24.1
GW160	3.673	2351	6.30	88.2	1.65	21.8
GW161	4.215	2698	5.92	139.3	4.75	20.1
GW162	10.093	6460	6.38	153.4	1.53	19.9
GW163	3.567	2283	6.36	174.7	3.56	22.6
Eastern Portion monitoring wells						
GW164	1.03	659	7.23	275.3	4.27	20.6
GW165	3.915	2506	6.49	184.1	--	19.3
GW166	0.3217	206	5.51	141.7	339	21.4
GW167	1.451	929	6.7	226	-1.8	19.9
GW168	1.493	956	6.61	207.8	5.57	19.4
GW169	0.2801	179	5.61	170.1	--	18.6
GW170	0.4173	267	6.25	176.7	2.6	19.8
GW171	0.583	373	6.11	242.1	2.47	18.9
GW172	0.1926	123	5.83	285.4	3.78	19.8
GW173	2.496	1597	7.41	-183.6	1.95	19.8
GW174	9.316	5962	6.64	210.3	--	20.2
GW175	1.183	757	7.55	225	--	19.2

* converted from EC using a multiplication factor of 640, as per Australian Drinking Water Guidelines 2011[28].
-- - no data
Highlighted Blue = wells considered screened into shallow perched water

[28] NHMRC, NRMMC 2011, *Australian Drinking Water Guidelines* Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra.

8.3 Groundwater Beneficial Use Assessment

A groundwater beneficial use assessment has been completed for regional groundwater in accordance with the NSW DEC 2007, *Guidelines for Assessment and Management of Groundwater Contamination*[29]. The findings indicate regional groundwater beneath WSU has limited environmental value (Table 13).

Table 14: Groundwater Beneficial Use Assessment

Summary of Groundwater Beneficial Uses		
Beneficial Use	**Applicable to Site**	**Comments**
Drinking Water	No	NSW DEC 2007 provides a three-step process for determining whether drinking water supply is a relevant environmental value: • Step 1 – Is the site located in a Department of Natural Resources list of major aquifers of drinking water quality? • Step 2 – Identify actual groundwater users in the area. • Step 3 – Is the Total Dissolved Solids (**TDS**) content within an acceptable range for drinking water use (≤ 2,000 mg/L TDS)? Groundwater within Londonderry Clay is not mapped as being within a major aquifer. There are no groundwater users in the area (Aurecon 2023). Groundwater TDS within Londonderry Clays is above the acceptable range for drinking water.
Stock Water / Irrigation Protection	No	WSU has agreement with Sydney Water to receive recycled water for irrigation. Dams onsite for stock water. Salinity an issue.
Aquatic Ecosystem Protection	No	For this environmental value to be considered groundwater beneath the site must discharge into an aquatic ecosystem. It is not known if groundwater connects with Rickabys Creek or the Hawkesbury River. Considering the groundwater flow rate (2cm/yr) and distance to surface water receptors is >4km from the centre of the WSU, protection of aquatic ecosytems is not considered a relevant environmental value for this study.
Groundwater Dependant Ecosystems	No	There are no GDEs reliant on regional groundwater within proximity of the site.
Surface Water Recreational Use	No	The nearest surface water is > 4km from the centre of WSU.
Buildings and Indoor Air	No	Protection of buildings from reactive / corrosive groundwater conditions and indoor air quality via vapour intrusions is not considered a relevant environmental value under the existing land uses.

8.4 Surface Water Quality

A summary of water quality parameters for surface waters is presented below, parameters are within the range of fresh water. Surface water field sampling sheets are provided in Appendix K, with calibration certificates provided in Attachment J.

[29] NSW DEC 2007, *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*. Department of Environment and Conservation NSW, March 2007.

Table 15: Surface Water Quality Parameters

Location	Name	EC (ms/cm)	TDS* (ppm)	pH	Redox (mV)	DO (mg/L)	Temp (°C)
Western Portion – Yarramundi paddocks							
DW1		0.090	57.6	5.62	188.0	10.11	23.7
DW2	Yarramundi Dam	0.75	480	9.57	110.5	10.07	19.9
Central Portion – campus core and Blacktown paddocks							
DW3	Hillside Dam	0.77	493	6.38	162.5	7.85	28.5
DW4	Horticultural Dam	0.78	499	7.81	149.0	9.90	25.7
DW5	Tafe Dam	0.157	100	6.49	136.2	4.91	26.7
Eastern Portion – Clarendon paddocks							
DW6	Turkey Nest Dam	0.99	634	9.65	25.4	9.50	29.3
DW7		0.99	634	8.77	41.2	7.73	32.2
DW8		0.434	278	5.92	64.1	4.4	32
DW9		0.83	531	9.35	36.8	8.62	31.9
DW10		0.77	493	7.33	48.4	6.61	30.2
DW11		0.81	518	8.47	1	6.53	28.2
DW12	Lindsey Dam	0.87	557	7.89	18.7	6.32	28.2
DW13		1.24	794	7.12	81.1	--	24.1

* converted from EC using a multiplication factor of 640, as per Australian Drinking Water Guidelines 2011.
-- - no data

8.5 Soil Analytical Results

PFAS were not detected at concentrations greater than the laboratory limits of reporting in all soil samples analysed. Soil analytical results are presented in Table 1a, Table 1b and Table 1c (Appendix N). Laboratory reports are presented in Appendix O.

8.6 Shallow Perched Water Analytical Results

PFOS was detected at a concentration above SAC (Freshwater 95% Species Protection) in one shallow perched water sample GW130, located beneath the Hawkesbury campus soccer field (Figure 6). PFOA was not detected in shallow groundwater in excess of SAC. A summary of analytical results is presented in Table 2, Appendix N.

Total PFAS were reported at their highest concentrations in shallow groundwater beneath the Hawkesbury campus soccer field (16 µg/l). Total PFAS concentrations were less than 1 µg/l in site wide shallow

groundwaters, excluding GW112 located on the western site boundary, which did not report a PFAS detection (Figure 7 Total PFAS).

8.7 Regional Groundwater Analytical Results

PFOS and PFOA were not detected in regional groundwater at concentrations in excess of SAC (Freshwater 95% Species Protection; Figure 8). A summary of analytical results is presented in Table 3, Appendix N.

Total PFAS was detected at highest concentrations in regional groundwater at location GW156 (1.07 µg/l) located in proximity to building H5, and GW136 (1.69 µg/l) located in proximity to building C13 (Figure 9). Confirmation sampling of GW156 and GW136 was conducted in March 2024, GW156 reported similar concentrations, GW136 reported a lower PFAS concentration of 0.5 µg/l.

Total PFAS was reported at concentrations below 1 µg/L in 4 other wells, three within the central portion and one located in the western portion. PFAS was non-detect in all other regional groundwater wells

8.8 Surface Water Analytical Results

PFOS and PFOA were not detected at concentrations above SAC (Freshwater 95% Species Protection) in all surface water samples analysed. A summary of analytical results is presented in Table 4, Appendix N.

For surface waters within the recycled water management plan total PFAS was consistently reported at concentrations of 0.04 µg/L and 0.08 µg/L (excluding Lindsey Dam 0.17 ugl).

PFAS was not detected in the unnamed dam in the western corner of the site (DW1) and Tafe Dam (DW5). Total PFAS was reported at a concentration of 0.15 µg/L in the former stock watering dam located at the southeastern site boundary (DW13).

8.9 QA/QC Results

Soil, groundwater and surface water duplicate/triplicate results (Tables 5, 6 and 7 – Appendix N) are within the adopted acceptance criteria of 30–50% (AS4482.1) relative percent difference (RPD), with exception to:

- RPD exceedances for field primary/duplicate pair GW166/DW1 and field triplicate primary/duplicate pair GW166/TW1.

The PFAS concentrations detected in samples GW166, DW1 and TW1 were less than 10 times the laboratory limit and therefore the RPD exceedance is considered acceptable.

PFAS was not detected in any of the equipment rinsate blanks, indicating the sampling equipment decontamination process used was sufficient to prevent cross contamination between samples via the sampling equipment.

PFAS was not detected in the field reagent blank samples indicating the sampling process, handling and transport techniques were sufficient to prevent cross contamination between samples, or other outside sources.

PFAS was not detected in two samples of municipal tap water sourced from campus (STOCK and STORE – Table 7, Appendix N).

A review of laboratory QAQC data is presented in Table 15.

Table 16: Laboratory QAQC Data Review

Report #	Analysis Within Holding Time	Surrogate Recovery	Lab. Duplicate RPD %	Lab Matrix Spike Recovery	Lab. Control Sample	Lab Method Blank
Western Portion						
1022861-S	✓	X	✓	✓	✓	✓
1022861-W	✓	✓	✓	✓	✓	✓
1022997-S	✓	✓	✓	✓	✓	✓
1025896-W	✓	X	✓	✓	✓	✓
1025792-W	✓	✓	✓	✓	✓	✓
1084465-W	✓	✓	✓	✓	✓	✓
Central Portion						
1041195-S	✓	X	✓	✓	✓	✓
1041195-W	✓	X	✓	✓	✓	✓
1041698-S	✓	✓	✓	✓	✓	✓
1041726-S	✓	✓	X	✓	✓	✓
1044064-W	✓	X	✓	✓	✓	✓
1044106-W	✓	X	✓	✓	✓	✓
1044108-W	✓	X	✓	✓	✓	✓
1050296-S	✓	X	✓	X	✓	✓
1050296-W	✓	X	✓	✓	✓	✓
1050402-S	✓	✓	✓	✓	✓	✓
1054229-W	✓	X	✓	✓	✓	✓
1054235-W	✓	X	✓	✓	✓	✓
1055258-S	✓	✓	✓	✓	✓	✓
1063340-W	✓	X	✓	✓	✓	✓
1063341-W	✓	X	✓	✓	✓	✓
1063348-S	✓	X	✓	✓	✓	✓
1063351-S	✓	X	✓	✓	✓	✓
1063351-W	✓	X	✓	✓	✓	✓
1065548-S	✓	X	✓	✓	✓	✓
1065548-W	✓	X	✓	✓	✓	✓
1081382-W	✓	X	✓	✓	✓	✓
1082557-W	✓	X	✓	✓	✓	✓
Eastern Portion						
1054231-W	✓	X	✓	✓	✓	✓
1063346-S	✓	X	✓	✓	✓	✓
1063346-W	✓	✓	✓	✓	✓	✓
1065548-S	✓	X	✓	✓	✓	✓

Report #	Analysis Within Holding Time	Surrogate Recovery	Lab. Duplicate RPD %	Lab Matrix Spike Recovery	Lab. Control Sample	Lab Method Blank
1065548-W	✓	X	✓	✓	✓	✓
1065390-S	✓	✓	✓	✓	✓	✓
1073963-S	✓	X	✓	✓	✓	✓
1073963-W	✓	X	✓	✓	✓	✓
1073964-S	✓	✓	✓	✓	✓	✓
1081382-W	✓	X	✓	✓	✓	✓
1082557-W	✓	X	✓	✓	✓	✓
1083225-S	✓	✓	✓	✓	✓	✓
1083225-W	✓	X	✓	✓	✓	✓
1083337-S	✓	✓	✓	✓	✓	✓
1084457-W	✓	✓	✓	✓	✓	✓
1084463-W	✓	X	✓	✓	✓	✓
1088973-W	✓	X	✓	✓	✓	✓
1088973-W	✓	X	✓	✓	✓	✓
✓ = Pass X = Fail -- = not required * = refer to report text						

Quality Assurance Criteria	Quality Control Criteria
Holding Times	**Accuracy**
PFAS: 28 Days soil/water	Surrogate, matrix spike, control sample 50–150%
	Precision
	Method Blank Not detected Duplicate – No limit (<10xEQL), 0–50% (10–20xEQL), 0–30% (>20xEQL)

Report #: 1022861-S, 1025896-W, 1041195-S, 1041195-W, 1044064-W, 1044106-W, 1044108-W, 1050296-S, 1050296-W, 1054229-W, 1054235-W, 1063340-W, 1063341-W, 1063348-S, 1063351-S, 1063351-W, 1065548-S, 1065548-W, 1081382-W, 1082557-W, 1054231-W, 1063346-S, 1065548-S, 1065548-W, 1073963-S, 1073963-W, 1081382-W, 1082557-W, 1083225-W, 1084463-W, 1088973-W, 10889730W

Some PFAS surrogate recoveries were outside of the recommended acceptance criteria. The laboratory reports “PFAS field samples that contain surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported, have been reviewed, and no data was affected”. Majority of outliers were surrogates of PFAS compounds with no SAC. Where surrogate recoveries of PFOS or PFOA were affected, these were of equipment rinsate samples or field reagent blanks. Recoveries of laboratory control samples were noted to be within the recommended acceptance criteria. The outliers are not considered to affect the integrity of the data and outcome of the investigation.

Report #: 1041726-S

An RPD % for PFOS laboratory duplicate was outside of the recommended acceptance criteria. The laboratory reports “further analysis indicates sample heterogeneity as the cause”. The outlier is not considered to affect the integrity of the data.

A matrix spike recovery for PFOS was outside of the recommended acceptance. The laboratory reports "The matrix spike concentration is less than five times the background concentration in the sample - therefore the spike recovery cannot be determined". An acceptable recovery was obtained for the laboratory control sample and the exceedance is not considered to affect data integrity.

Deviations from the SAQP

Deviations from the SAQP program are noted in Table 17.

Table 17: SAQP Deviations

SAQP Component	SAQP Protocol	Deviation
Use of products that may cause PFAS contamination of samples	Sunscreen is listed as a product not to be worn during field works.	Sunscreen was worn by field staff during the sampling program. Standard precautions during sampling were taken such as hand washing and wearing dedicated disposable gloves.
	Water-proof clothing not to be worn during field works.	When raining during drilling work PVC raincoats were used.
Hydrasleeves	Groundwater to be sampled via the use of HDPE hydrasleeves, as per guidelines provided in the PFAS NEMP 2.0 that HDPE products should be used for PFAS sampling.	Groundwater monitoring wells sampled prior to 24 January 2024 were sampled with LDPE hydrasleeves. This is not considered to affect data integrity given: • Laboratory analysis did not detect PFAS concentrations above laboratory limits in the majority of groundwater samples collected prior to 24 January 2024; • The majority of groundwater samples identified with PFAS concentration detections collected prior to 24 Jan 2024 were resampled in March 2024 with an HDPE sleeve (GW103, GW119, GW128, GW131, GW136, GW137, GW146, GW156). The PFAS concentrations detected in the groundwater of the resampled monitoring wells were comparable with the original results.

Deviations from the QA/QC Program

Deviations from the QA/QC program are noted in Table 18.

Table 18: QAQC Program Deviations

QA/QC Component	QA/QC Protocol	Deviation
Rinsate	One rinsate sample collected per day when using reusable equipment.	Rinsate samples were collected on some of the days when soil sampling was conducted, and all days during groundwater sampling. A select few were run for analysis, results demonstrating decontamination procedures were adequate.
Field Reagent Blank	One field reagent blank sample per round of sampling.	A field reagent blank was not performed for one round of sampling comprising soil sampling from GW151 and GW152. This is not considered to

QA/QC Component	QA/QC Protocol	Deviation
		significantly impact the data as all soil samples were below the laboratory detection limit for PFAS.

Geo-Logix accepts the integrity of the analytical data. Laboratory reports are provided in Appendix O.

9. CONCLUSION

The results of assessment did not identify PFAS contamination to soil, regional groundwater or surface waters at concentrations exceeding SAC. PFOS was the only compound reported at a concentration in excess of SAC in shallow perched water beneath the soccer field. Shallow perched water is not extracted therefore there is no complete human health exposure pathway.

The interaction between shallow perched water and unlined stormwater drains around the former development site and student accommodation is unknown and potentially represents a complete exposure pathway to the environment.

The findings of this assessment indicate there are no unacceptable risks to health or the environment from PFAS at the locations investigated. It is understood there is a PFAS source on Hawkesbury campus. The long-term risk to health or environment from the PFAS source is beyond the limits of this study.

10. LIMITATIONS

This report should be read in full, and no executive summary, conclusion or other section of the report may be used or relied on in isolation, or taken as representative of the report as a whole. No responsibility is accepted by Geo-Logix, and any duty of care that may arise but for this statement is excluded, in relation to any use of any part of this report other than on this basis.

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To the extent permitted by law, Geo-Logix makes no warranties or representations as to the:

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b. potential statutory requirements for remediation, if any, of the Site,

c. approvals, if any, that may be needed in respect of any use or category of use, or

d. level of remediation, if any, that is warranted to render the Site suitable for any specific use, or category of use, or

e. level of ongoing monitoring of Site conditions, if any, that is required in respect of any specific use, or category of use, or

f. presence, extent or absence of any substance in, on or under the Site, other than as expressly stated in this report.

The conclusions stated in this report are based solely on the information, Scope of Works, analysis and data that are stated or expressly referred to in this report.

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Without limiting the paragraph above, where laboratory tests have been carried out by others on Geo-Logix's behalf, the tests are reproduced in this report on the assumption that the tests are accurate. Geo-Logix has not sought independently to verify the accuracy of those tests and assumes no responsibility in respect of them.

Geo-Logix assumes no responsibility in respect of any changes in the condition of the Site which have occurred since the time when Geo-Logix gathered data and/or took samples from the Site on its site inspections dated **21 August 2023 to 17 April 2024.**

Given the nature of asbestos, and the difficulties involved in identifying asbestos fibres, despite the exercise of all reasonable due care and diligence, thorough investigations may not always reveal its presence in either buildings or fill. Even if asbestos has been tested for and those tests' results do not reveal the presence of asbestos at those specific points of sampling, asbestos or asbestos containing materials may still be present at the Site, particularly if fill has been imported at any time, buildings constructed prior to 1980 have been demolished on the Site or materials from such buildings have been disposed of on the Site.

Where the Scope of Works does not include offsite investigations, Geo-Logix provides no warranty as to offsite conditions, including the extent if any to which substances in the Site may be emanating off site, and if so whether any adjoining sites have been or may be impacted by contamination originating from the Site.

Where the Scope of Works does not include the investigation, sampling, monitoring or other testing of groundwater in, on or under the Site, Geo-Logix provides no warranty or representation as to the quality of groundwater on the Site or the actual or potential migration of contamination in groundwater across or off the Site.

Subsurface site conditions are typically heterogeneous and may change with time. Samples taken from different points on the Site may not enable inferences to be drawn about the condition of areas of the Site significantly removed from the sample points, or about the condition of any part of the Site whatsoever, in particular where the proposed inferences are to be drawn a long time after the date of the report.

Geo-Logix has prepared this report with the diligence, care and skill which a reasonable person would expect from a reputable environmental consultancy and in accordance with environmental regulatory authority and industry standards, guidelines and assessment criteria applicable as at the date of this report. Industry standards and environmental criteria change frequently, and may change at any time after the date of this report.

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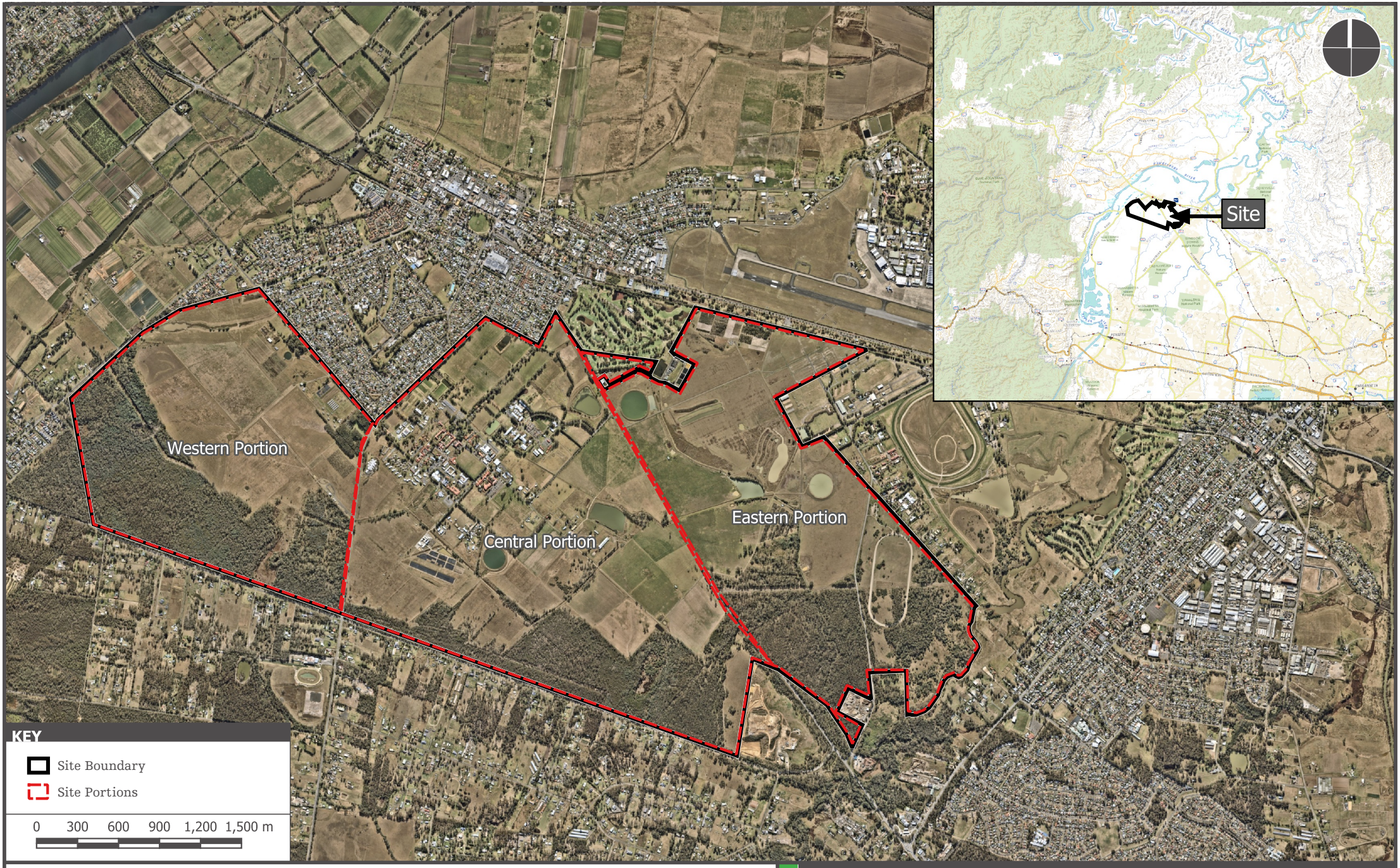
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FIGURES



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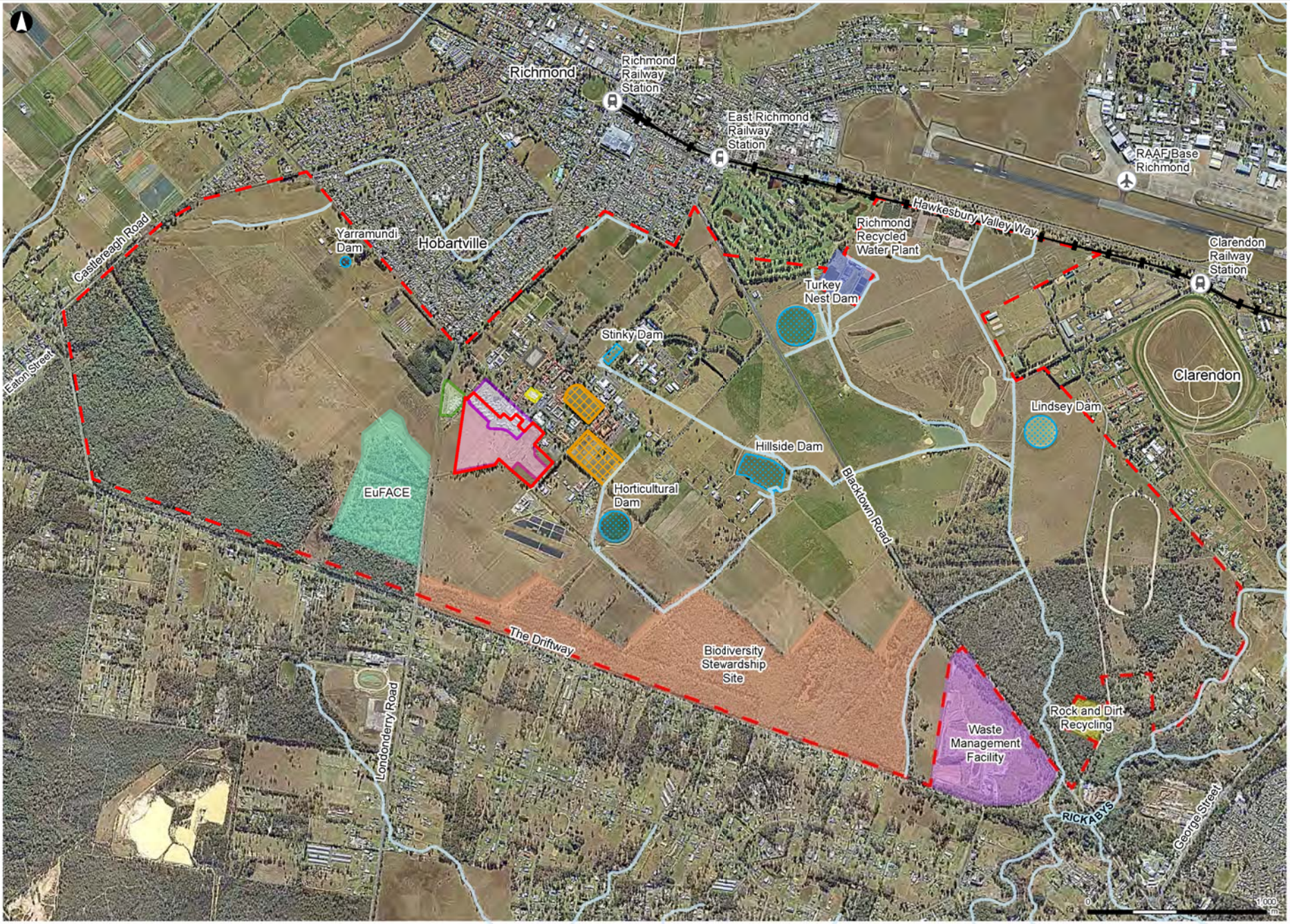
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PROPERTY LAYOUT AND LOCALITY

PFAS Environmental Site Assessment
2 College Street, Richmond NSW

Project No. 2301034

Figure 1



LEGEND

- Campus Boundary
- Site Boundary
- Airport
- Train Station
- Railway
- Hydroline

Onsite Features

- Student Residences
- Former Centre of Excellence in Agricultural Education
- Anglicare Aged Care
- Childcare
- HIE + Science Building
- Sports Fields
- Biodiversity Stewardship Site
- EucFACE
- Dams

Offsite Features

- Richmond Recycled Water Plant
- Rock and Dirt Recycling
- Waste Management Facility

1:21,000 at A3

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Coordinate System: GDA2020 MGA Zone 56
Date issued: December 22, 2023
Topographic Service Layer Credits: OpenStreetMap
Imagery: Nearmap, captured on 11/04/2023



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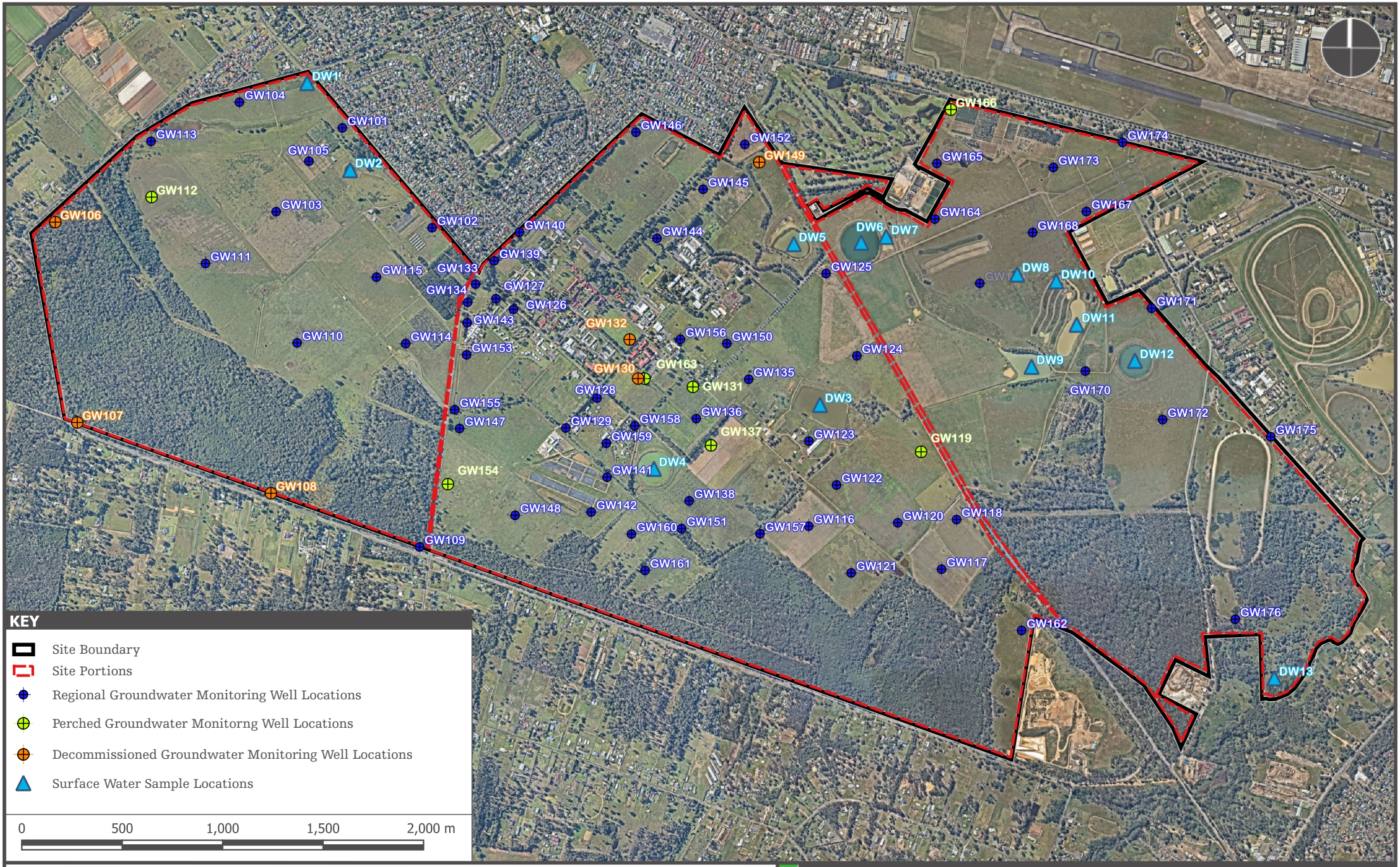
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SITE FEATURES

PFAS Environmental Site Assessment
2 College Street, Richmond NSW

Project No. 2301034

Figure 2



KEY

- Site Boundary
- Site Portions
- Regional Groundwater Monitoring Well Locations
- Perched Groundwater Monitorng Well Locations
- Decommissioned Groundwater Monitoring Well Locations
- Surface Water Sample Locations

0 500 1,000 1,500 2,000 m

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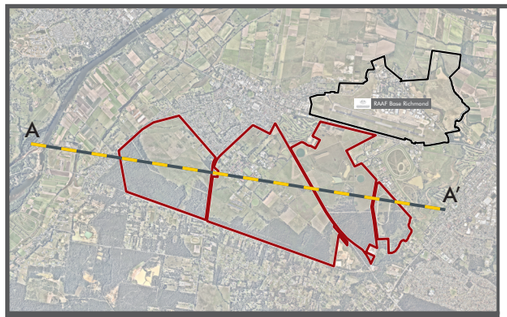
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SITE MAP

PFAS Environmental Site Assessment
2 College Street, Richmond NSW

Project No. 2301034

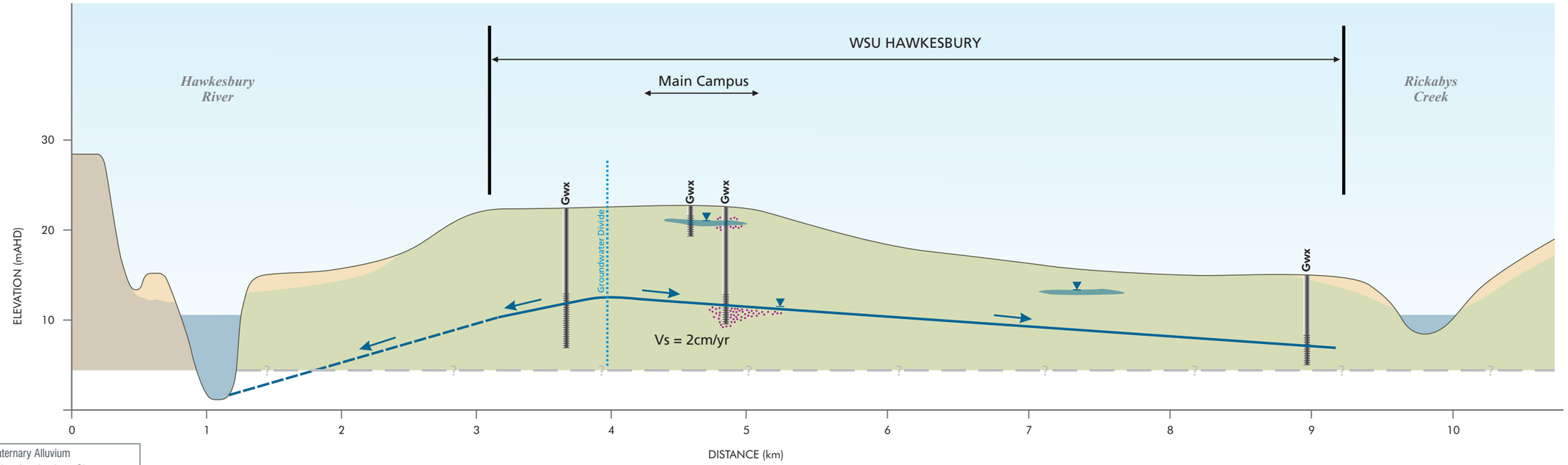
Figure 3



SECTION TRANSECT

WEST

EAST



Quaternary Alluvium
Tertiary Londonderry Clay
Triassic Hawkesbury Sandstone
Groundwater well
Perched groundwater
PFAS
Regional groundwater

Horizontal Scale
0 0.5 1km

Vertical Scale
0 10 20m

R:\Reports\L4148 QC Richmond\FIGURES\L-4148 F4 Hydrogeological Section Schematic AA 19 06 2024 Rev B

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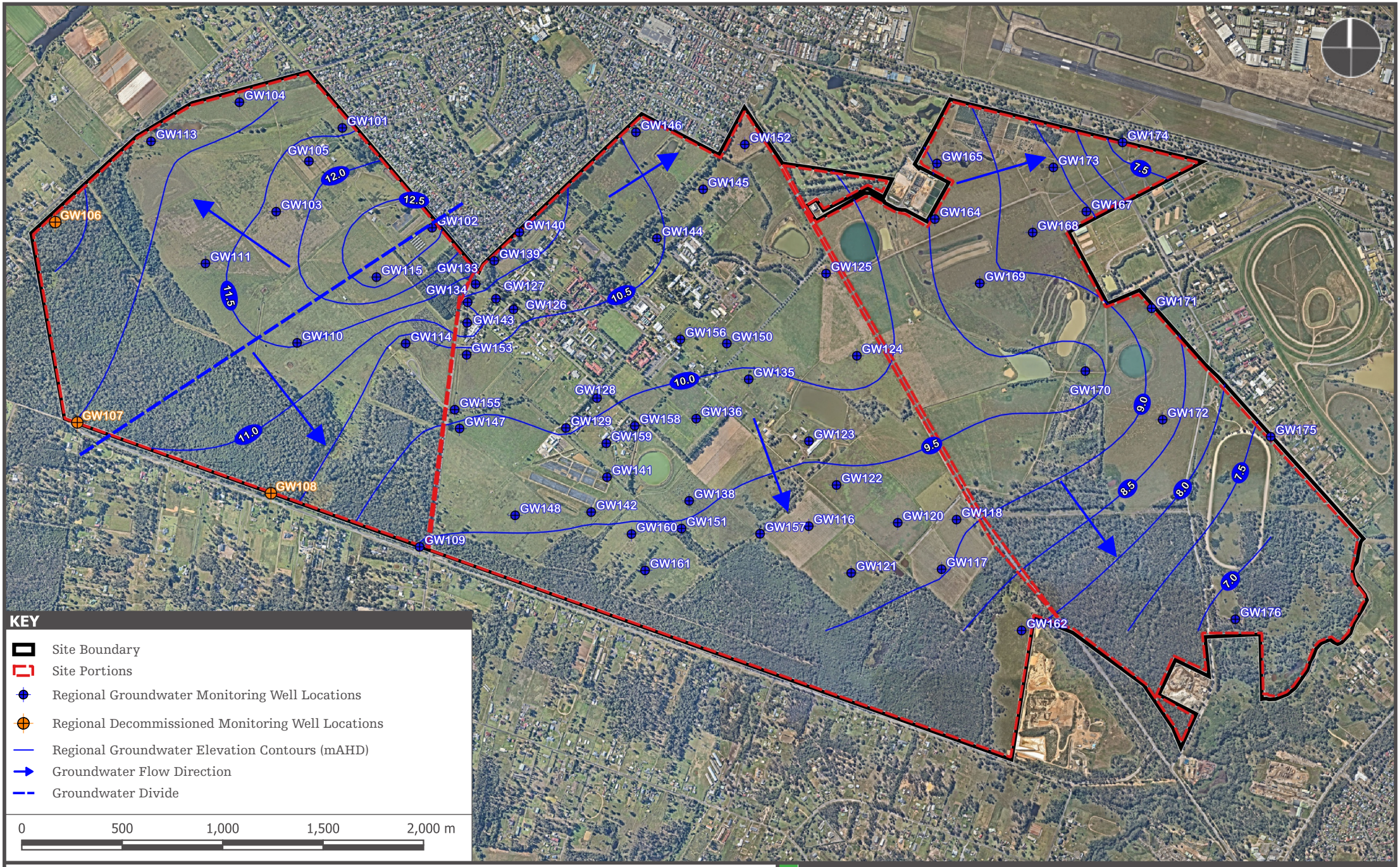
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SCHEMATIC HYDROGEOLOGICAL SECTION A-A'

PFAS Environmental Site Assessment
2 College Street, Richmond NSW

Project No. 2301034b

Figure 4



KEY

- Site Boundary
- Site Portions
- Regional Groundwater Monitoring Well Locations
- Regional Decommissioned Monitoring Well Locations
- Regional Groundwater Elevation Contours (mAHD)
- Groundwater Flow Direction
- Groundwater Divide

0 500 1,000 1,500 2,000 m

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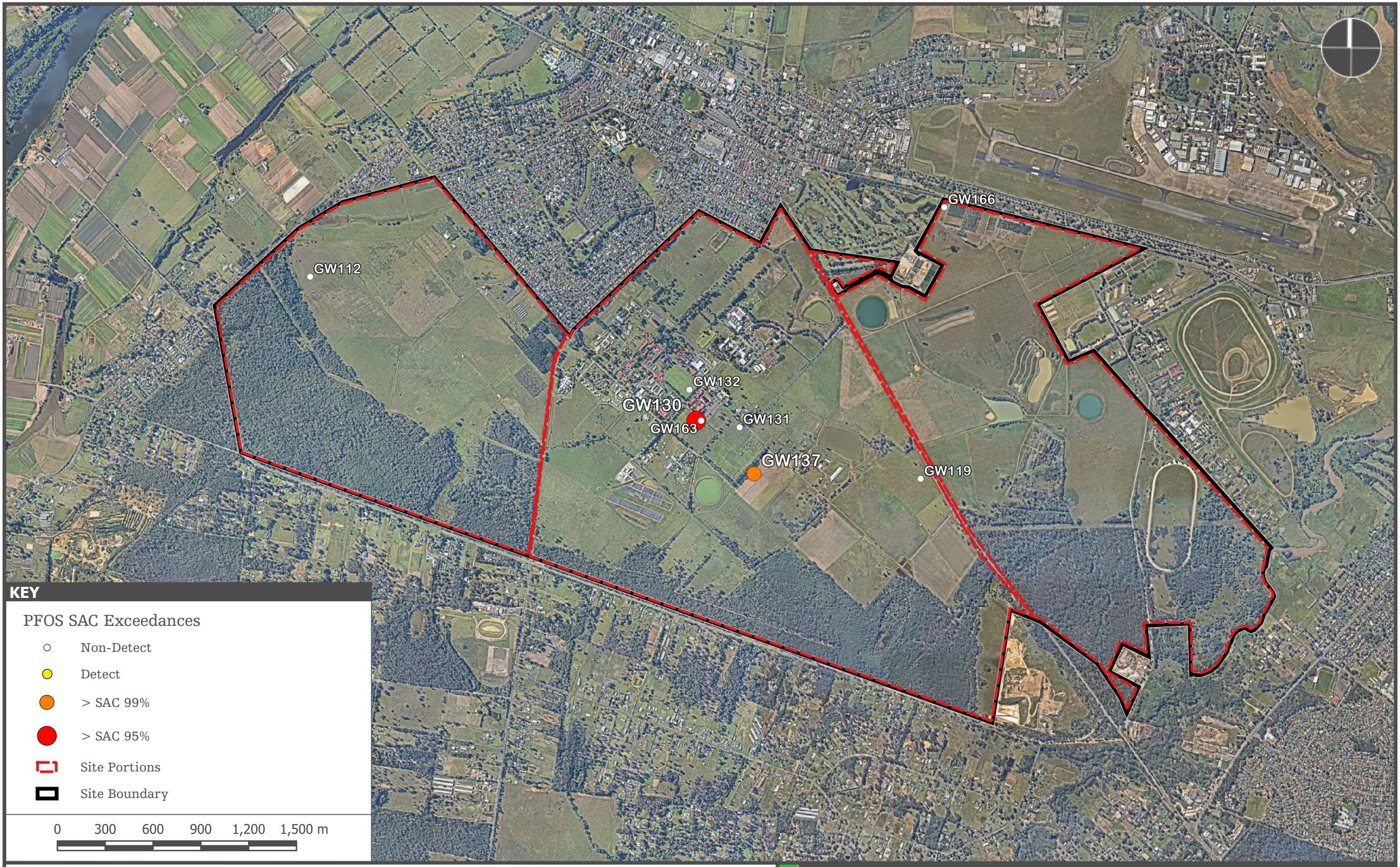
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REGIONAL GROUNDWATER ELEVATION MAP

PFAS Environmental Site Assessment | September 2023 - April 2024
2 College Street, Richmond NSW

Project No. 2301034

Figure 5



KEY

PFOS SAC Exceedances

- Non-Detect
- Detect
- > SAC 99%
- > SAC 95%
- Site Portions
- Site Boundary

0 300 600 900 1,200 1,500 m

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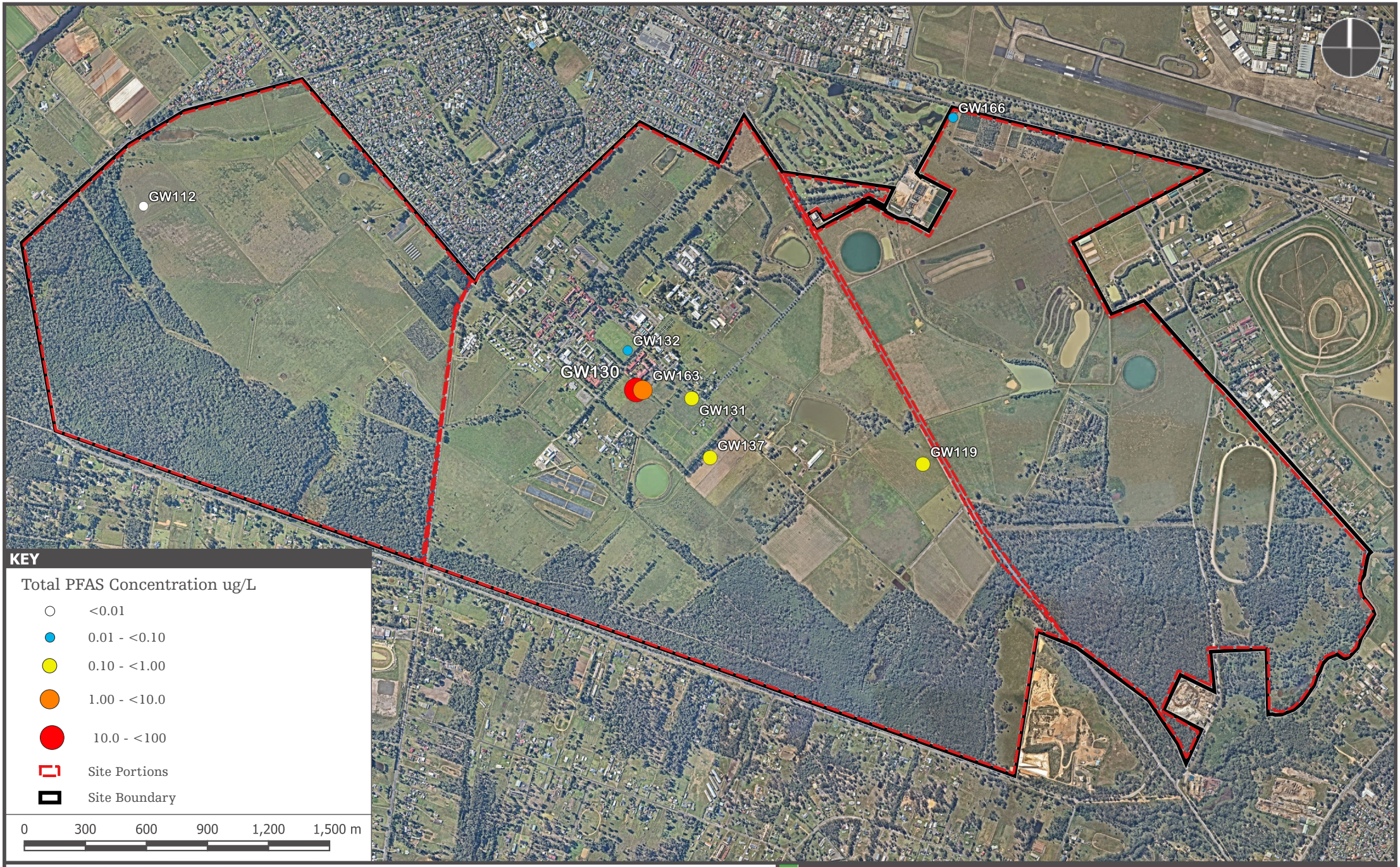
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PFOS SAC EXCEEDANCES - SHALLOW PERCHED WATER

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2 College Street, Richmond NSW

Project No. 2301034

Figure 6



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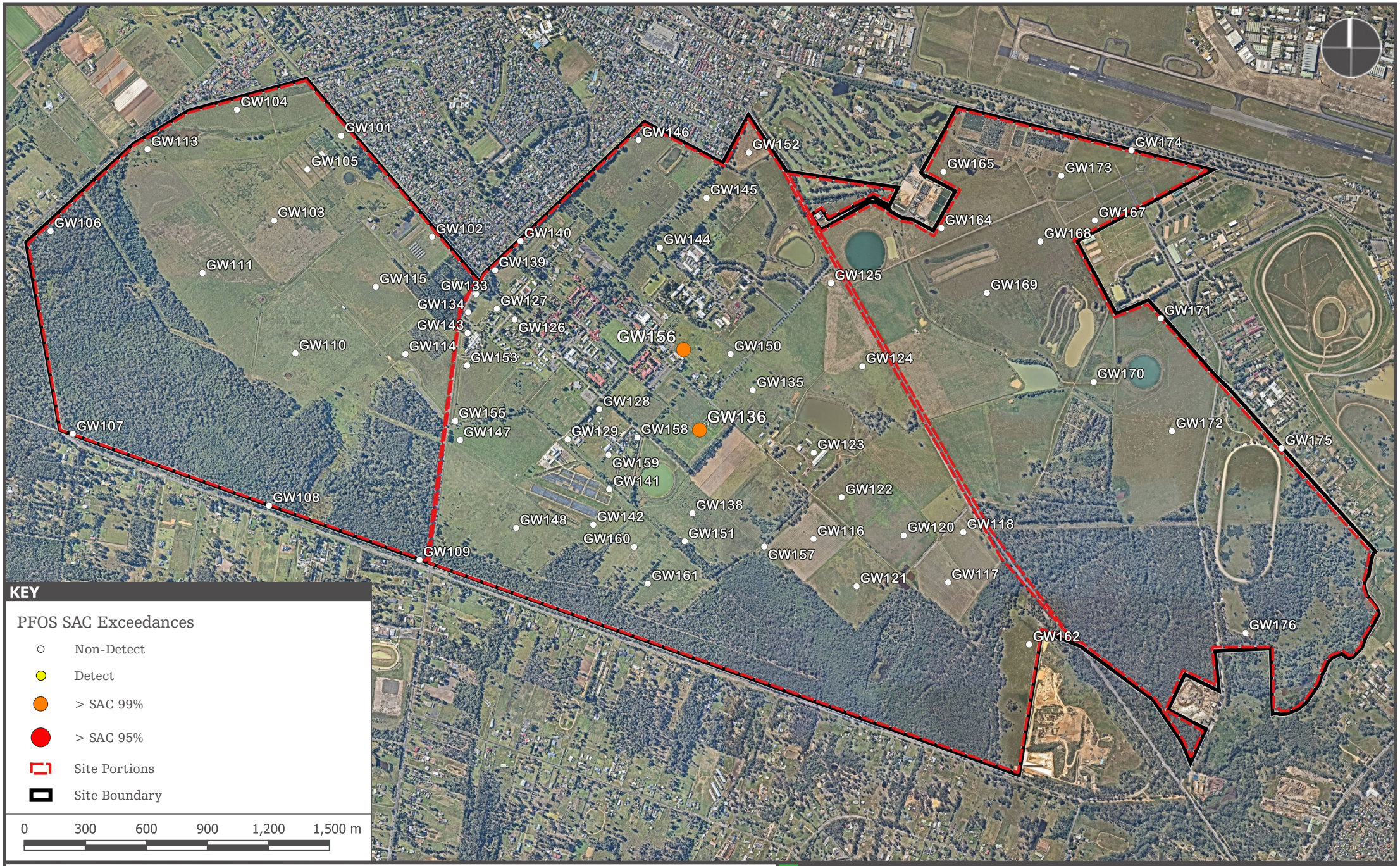
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TOTAL PFAS CONCENTRATION - SHALLOW PERCHED WATER

September 2023 - April 2024 | PFAS Environmental Site Assessment
2 College Street, Richmond NSW

Project No. 2301034

Figure 7



KEY

PFOS SAC Exceedances

- Non-Detect
- Detect
- > SAC 99%
- > SAC 95%
- Site Portions
- Site Boundary

0 300 600 900 1,200 1,500 m

Geo-Logix

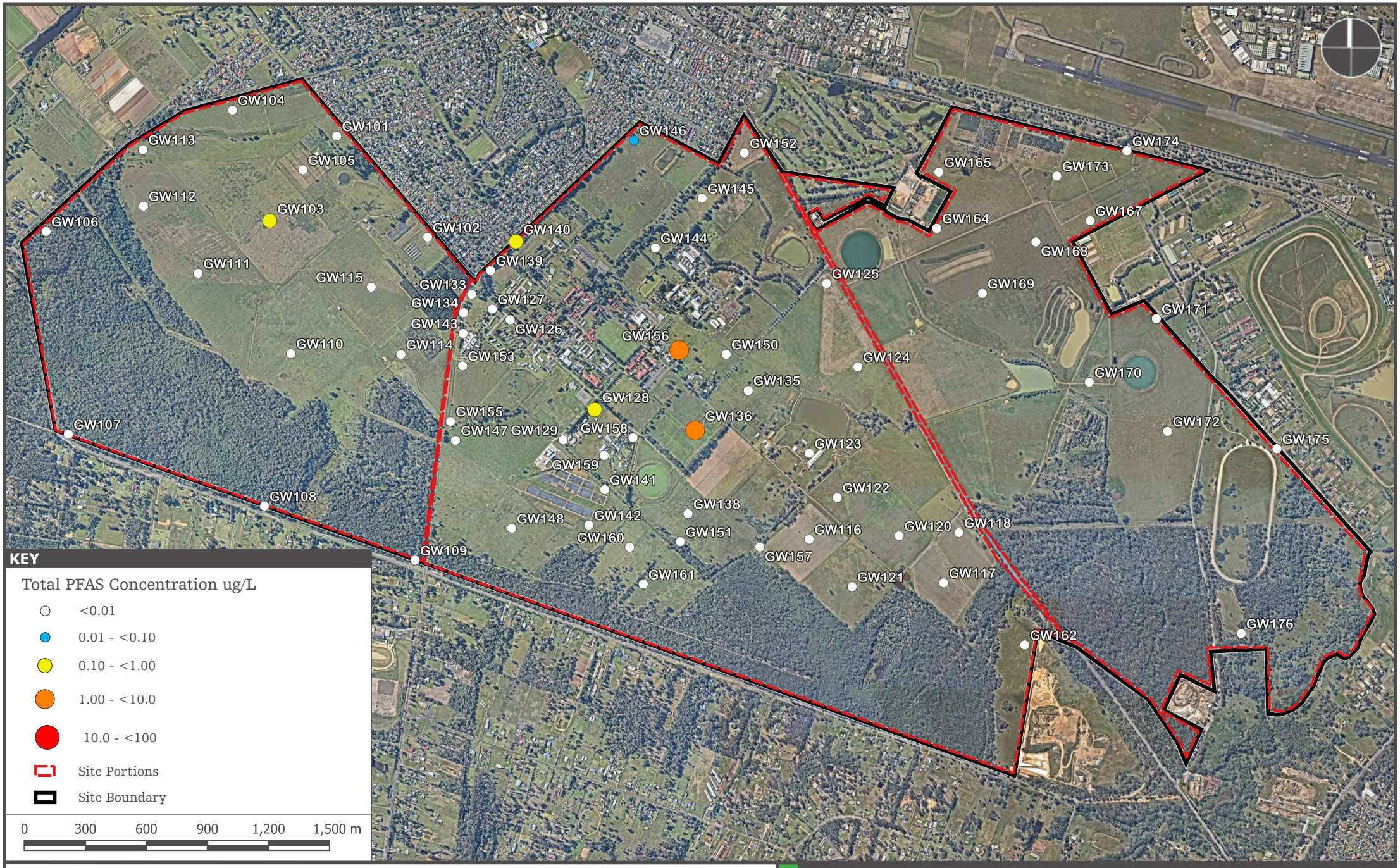
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PFOS SAC EXCEEDANCES - REGIONAL GROUNDWATER

September 2023 - April 2024 | PFAS Environmental Site Assessment
2 College Street, Richmond NSW

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Figure 8



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TOTAL PFAS CONCENTRATION - REGIONAL GROUNDWATER

September 2023 - April 2024 | PFAS Environmental Site Assessment
2 College Street, Richmond NSW

Project No. 2301034

Figure 9

APPENDIX A





LOCALITY MAP

Notes:
1. Basemap from metromap.com

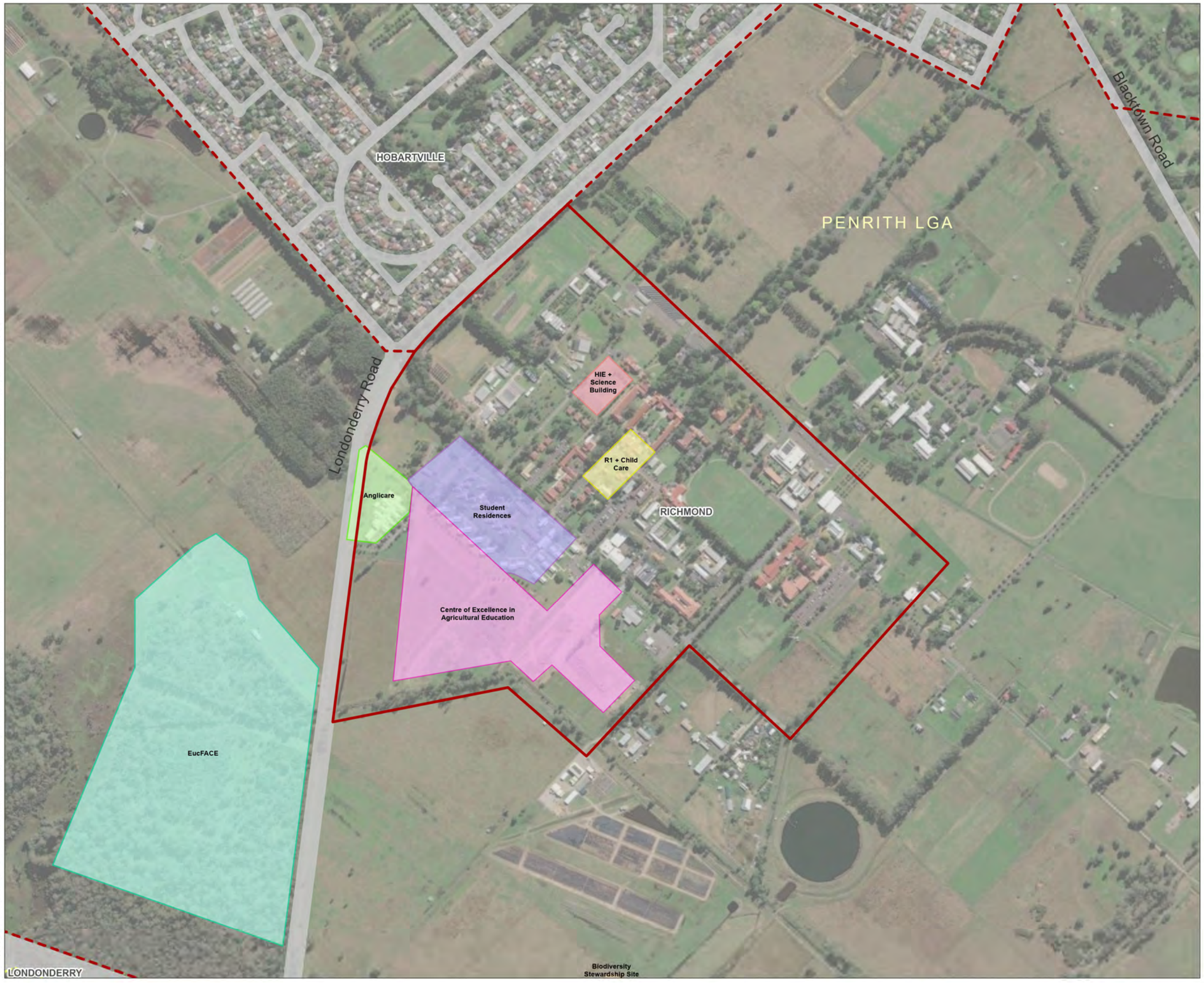
Legend

Site boundary

0 50 100 150 m

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Richard Crookes Constructions Pty Ltd		TITLE: **Site Boundary and Locality** **Proposed Centre of Excellence** **Vines Drive, Richmond**	N	PROJECT No: 85644.12
	OFFICE: Sydney	DRAWN BY: SR			DRAWING No: 1
	SCALE: 1:2500 @ A3	DATE: 25.08.2022			REVISION: 0

APPENDIX B





Legend

- Watercourse
- Roads
- Local Government Area
- Campus Boundary
- Core Campus

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, GIS User Community, NSW Government

Date: 8/12/2022 Version: 1

Author: Catherine.Lee Path: C:\Users\Catherine.Lee\Aurecon Group\SAVI Spatial - Documents\Project Work\J0211_P522692_WesternSydneyUniversity_HawkesburyCampus\Project\P522692_WSU_HawkesburyUni\P522692_WSU_HawkesburyUni.aprx

A3 scale: 1:8,000

0 150 300 Metres

Job No: 522692

Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (WSU) (Hawkesbury Campus) - Environmental Site Assessment

Figure 1: Site Overview - Core Campus

aurecon



Legend

- Soil Investigation Locations
- Richmond Aerodrome
- Railway Station
- Railway
- Watercourse
- Local Government Area
- Agri Tech Hub Precinct
- Anglicare
- Biodiversity Stewardship Site
- Centre of Excellence in Agricultural Education
- EucFACE
- HIE + Science Building
- R1 + Child Care
- Student Residences
- Campus Boundary
- Core Campus

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, GIS User Community, NSW Government

Date: 8/12/2022 Version: 1

A3 scale: 1:30,000

0 500 1,000 Metres

Job No: 522692

Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (WSU) (Hawkesbury Campus) - Environmental Site Assessment

Figure 2: Soil Investigation Locations - Entire Campus

Author: Catherine.Lee Path: C:\Users\Catherine.Lee\Aurecon Group\SAVI Spatial - Documents\Project Work\J0211_P522692_WesternSydneyUniversity_HawkesburyCampus\Project\P522692_WSU_HawkesburyUni\P522692_WSU_HawkesburyUni.aprx

aurecon



Legend

- Surface Water Investigation Locations
- Richmond Aerodrome
- Railway Station
- Railway
- Watercourse
- Local Government Area
- Roads
- Agri Tech Hub Precinct
- Anglicare
- Biodiversity Stewardship Site
- Centre of Excellence in Agricultural Education
- EucFACE
- HIE + Science Building
- R1 + Child Care
- Student Residences
- Campus Boundary
- Core Campus
- Arterial_Road

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, GIS User Community. NSW Government

Date: 8/12/2022 Version: 1

Author: Catherine.Lee Path: C:\Users\Catherine.Lee\Aurecon Group\SAVI Spatial - Documents\Project Work\J0211_P522692_WesternSydneyUniversity_HawkesburyCampus\Project\P522692_WSU_HawkesburyUni\P522692_WSU_HawkesburyUni.aprx

A3 scale: 1:30,000

0 500 1,000 Metres

Job No: 522692

Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (WSU) (Hawkesbury Campus) - Environmental Site Assessment

Figure 3: Surface Water Investigation Locations - Boundary Campus

aurecon



Legend

- Groundwater Investigation Locations
- Richmond Aerodrome
- Railway Station
- Railway
- Watercourse
- Local Government Area
- Roads
- Agri Tech Hub Precinct
- Anglicare
- Biodiversity Stewardship Site
- Centre of Excellence in Agricultural Education
- EucFACE
- HIE + Science Building
- R1 + Child Care
- Student Residences
- Campus Boundary
- Core Campus

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, GIS User Community, NSW Government

Date: 8/12/2022 Version: 1

A3 scale: 1:30,000

0 500 1,000 Metres

Job No: 522692

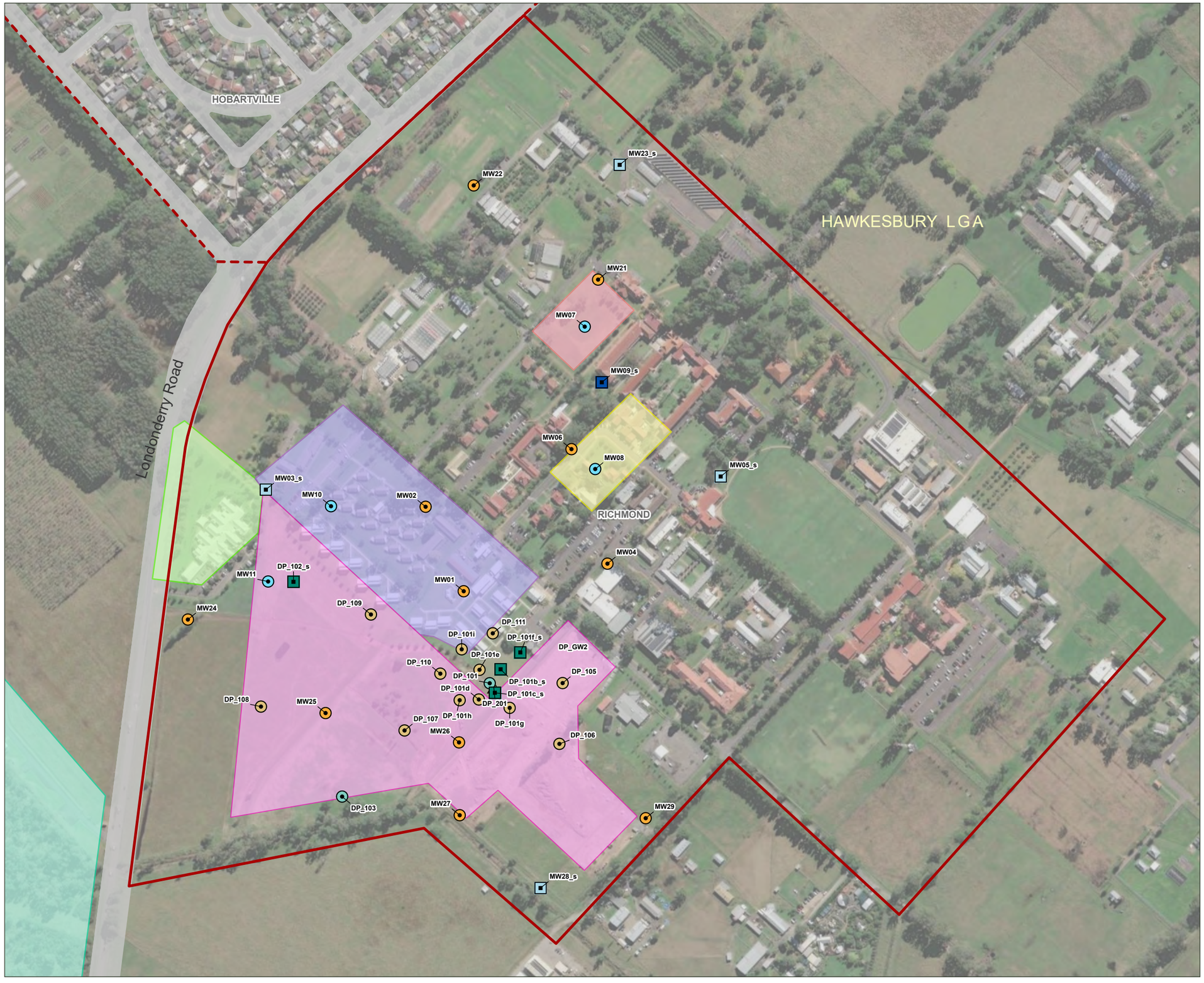
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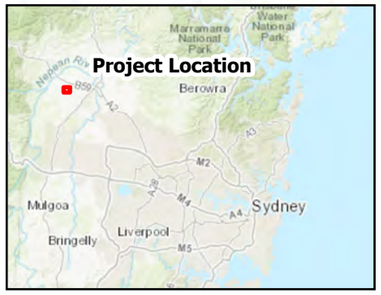
Western Sydney University (WSU) (Hawkesbury Campus) - Environmental Site Assessment

Figure 4: Groundwater Investigation Locations - Boundary Campus

Author: Catherine.Lee Path: C:\Users\Catherine.Lee\Aurecon Group\SAVI Spatial - Documents\Project Work\J0211_P522692_WesternSydneyUniversity_HawkesburyCampus\Project\P522692_WSU_HawkesburyUni\P522692_WSU_HawkesburyUni.aprx

APPENDIX C





Legend

- Groundwater Investigation Location within Deep Aquifer - Douglas Partners Wells July 2022
- Groundwater Investigation Locations within Perched Aquifer - Douglas Partners Wells April 2022
- Groundwater Investigation Locations within Perched Aquifer - Douglas Partners Wells June 2022
- Groundwater Investigation Locations within Perched Aquifer - WSU Well
- Groundwater Investigation Locations within Perched Aquifer - May 2023
- Groundwater Investigation Locations within Perched Aquifer - October 2022
- Groundwater Paired Investigation Locations within Perched Aquifer - Douglas Partners Wells June 2022
- Groundwater Paired Investigation Locations within Perched Aquifer - May 2023
- Groundwater Paired Investigation Locations within Perched and Deep Aquifer - May 2023
- Local Government Area
- Roads
- Campus Boundary
- Core Campus

Source:
Aurecon 2023
Aerial Imagery (Esri 2023)

Date: 9/06/2023 Version: 1

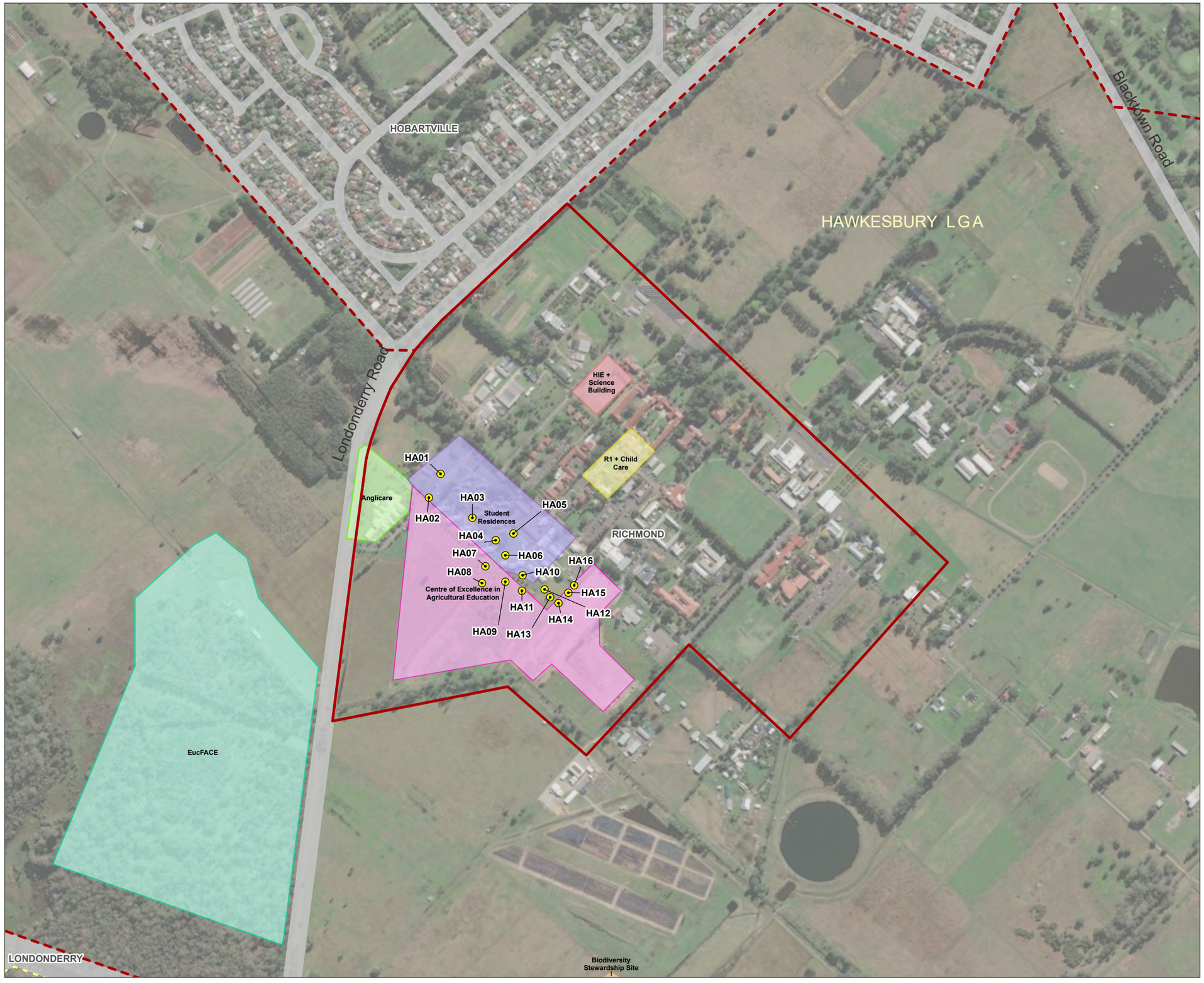
Author: Connor.Wilson

A3 scale: 1:4,750
0 100 200 Metres

Job No: 522692
Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (Hawkesbury Campus) Detailed Site Investigation – Campus Core

Figure 4A: Groundwater Investigation Locations - Core Campus





Legend

- Shallow Soil Investigation Locations
- Roads
- Local Government Area
- Campus Boundary
- Core Campus

Source:
Aurecon 2023
Aerial Imagery (Esri 2023)

Date: 9/06/2023 Version: 1

A3 scale: 1:8,000

0 150 300 Metres

Job No: 522692

Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (Hawkesbury Campus) Detailed Site Investigation – Campus Core

Figure 3: Shallow Soil Investigation Locations

Author: Connor.Wilson Path: C:\Users\connor.wilson\Aurecon Group\SAV\ Spatial - Documents\Project Work\J0211_P522692_WesternSydneyUniversity_HawkesburyCampus\Project\P522692_WSU_UpdatedMapping\P522692_WSU_HawkesburyUni_UpdatedMapping.aprx

aurecon



Legend

- Soil Investigation Locations - October 2022
- Soil Investigation Locations - May 2023
- Richmond Aerodrome
- Railway Station
- Railway
- Watercourse
- Local Government Area
- Agri Tech Hub Precinct
- Anglicare
- Biodiversity Stewardship Site
- Centre of Excellence in Agricultural Education
- EucFACE
- HIE + Science Building
- R1 + Child Care
- Student Residences
- Campus Boundary
- Core Campus

Source:
Aurecon 2023
Aerial Imagery (Esri 2023)

Date: 9/06/2023 Version: 1

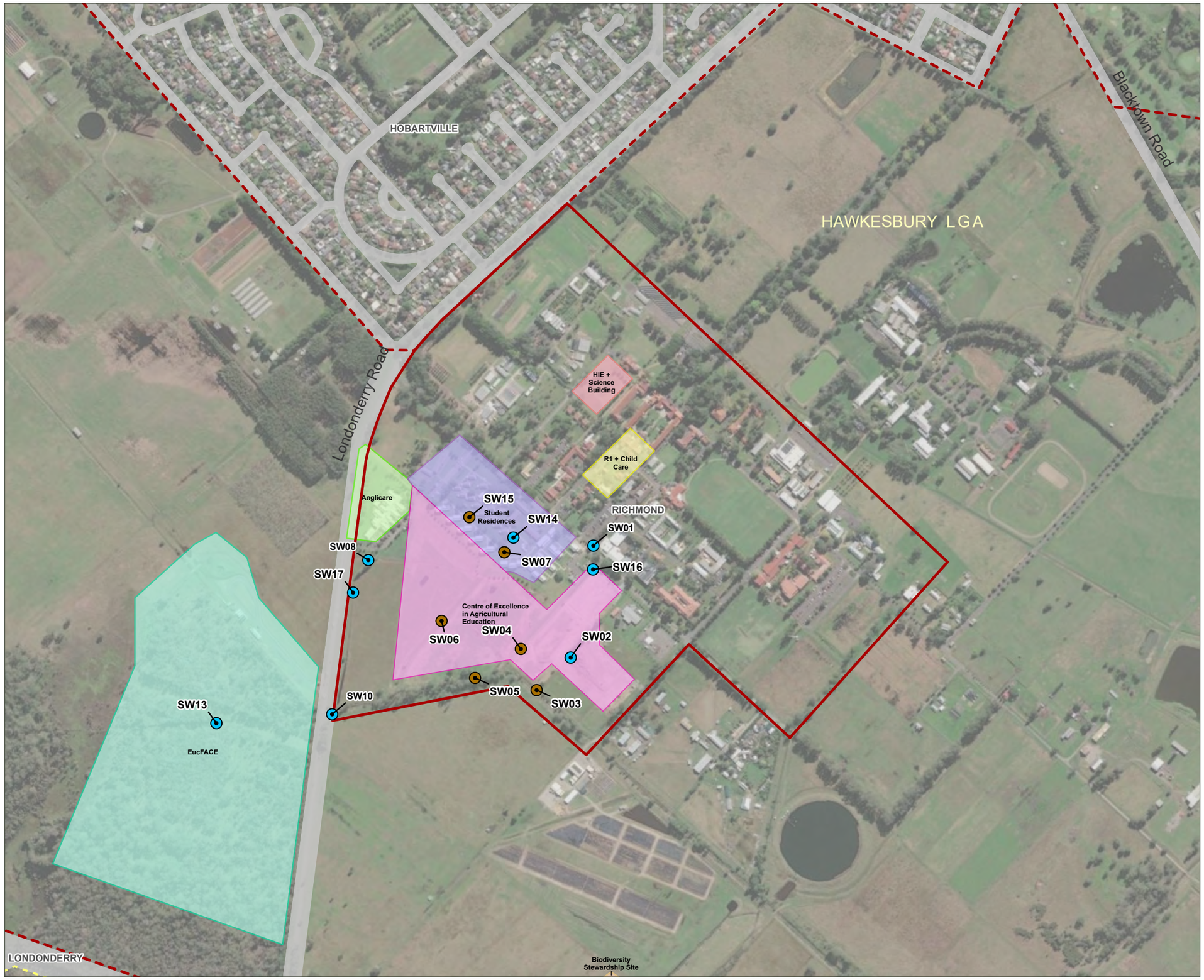
Author: Connor.Wilson

A3 scale: 1:30,000
0 500 1,000 Metres

Job No: 522692
Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (Hawkesbury Campus) Detailed Site Investigation – Entire Campus

Figure 2B: Soil Investigation Locations - Entire Campus





Legend

- Storm Water Water Monitoring Locations
- Storm Water/Sediment Monitoring Locations
- Roads
- Local Government Area
- Campus Boundary
- Core Campus

Source:
Aurecon 2023
Aerial Imagery (Esri 2023)

Note:
As of the date of this report, stormwater sampling has not been conducted as there were not significant storm events during the May 2023 investigation program

Date: 9/06/2023 Version: 1

A3 scale: 1:8,000

0 150 300 Metres

Job No: 522692

Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (Hawkesbury Campus) Detailed Site Investigation – Campus Core

Figure 5: Proposed Storm Water/Sediment Investigation Locations

Author: Connor.Wilson Path: C:\Users\connor.wilson\Aurecon Group\SAVI Spatial - Documents\Project Work\0211_P522692_WSU_UpdatedMapping\P522692_WSU_HawkesburyUni_UpdatedMapping.aprx

APPENDIX D



aurecon



Legend

- Soil Investigation Locations
- Alternative CoE Site
- Campus Boundary
- Core Campus

Source:
Aurecon 2023
Aerial Imagery (Esri 2023)

Date: 29/06/2023 Version: 1

A3 scale: 1:4,500

0 100 200 Metres

Job No: 522692

Coordinate System: GDA 1994 MGA Zone 56

Western Sydney University (Hawkesbury Campus) Environmental Site Assessment at the Alternative CoE Site

Figure 2: Soil Investigation Locations

Author: Connor.Wilson Path: C:\Users\connor.wilson\Aurecon Group\SAVI Spatial - Documents\Project Work\0211_P522692_WSU_HawkesburyUni_UpdatedMapping\P522692_WSU_UpdatedMapping\P522692_WesternSydneyUniversity_HawkesburyCampus\Project\P522692_WSU_UpdatedMapping - Stage 3.aprx

APPENDIX E



Geo-Logix

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SITE MAP

Factual Letter Report
2 College Street, Richmond NSW

Project No. 2301034e

Figure 2

APPENDIX F

Geo-Logix
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SAMPLING ANALYSIS QUALITY PLAN



Western Sydney University, Hawkesbury Campus

2 College Street, Richmond NSW 2753

Hamilton Locke – August 2023

Privileged and Confidential

DOCUMENT CONTROL

SAMPLING ANALYSIS AND QUALITY PLAN

Western Sydney University, Hawkesbury Campus
2 College Street,
Richmond NSW 2753

PREPARED FOR

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Report reference: 2301034SAQPDraftV01_27Jul23

Date: 27 July 2023

DISTRIBUTION AND REVISION REGISTER

Revision Number	Date	Description	Recipient	Deliverables
V01	28/07/23	Draft Report 2301034SAQPDarftV01_27Jul23x	Hamilton Locke Geo-Logix	1 E Copy
V01	26/09/23	Final Report 2301034SAQPFinalV01_26Sep23	Hamilton Locke Geo-Logix	1 E Copy

Issued by: Geo-Logix Pty Ltd

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FIGURES

Figure 1: Site Locality

Figure 2: Site Layout

ATTACHMENTS

Attachment A: WSU Proposed Sampling Locations

ABBREVIATIONS AND ACRONYMS

AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australian and New Zealand Governments
CLM Act	Contaminated Land Management Act
CSM	Conceptual Site Model
DQIs	Data Quality Indicators
DQOs	Data Quality Objectives
DVG	Default Guideline Value
EPA	Environmental Protection Agency (NSW)
GME	Groundwater Monitoring Event
HILs	Heath Investigation Levels
GILs	Groundwater Investigation Levels
LOR	Limit of Reporting
mbgl	Meters Below Ground Level
NATA	National Association of Testing Authority
NEMP	National Environmental Management Plan (PFAS)
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
PFAS	Per- and Polyfluoroalkyl Substances
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percent Difference
RL	Reduced Level (mAHD)
SAQP	Sampling and Analysis Quality Plan
SPR	Source-Receptor-Pathway linkages
µg/L	Micrograms per Litre
US EPA	United States Environmental Protection Agency

1. INTRODUCTION

Geo-Logix Pty Ltd (Geo-Logix) has been engaged by Hamilton Locke (the client) on behalf of Western Sydney University (WSU) to provide a Sampling Analysis and Quality Plan (SAQP) for an investigation of per- and polyfluoroalkylated substances (PFAS) contamination at the WSU Hawkesbury Campus, located at 2 College Street, Richmond NSW 2753 (the site). The site location and layout are provided in Figure 1 and 2 respectively.

1.1 Background

The site spans approximately 14km^2, and has been a school of agriculture since 1891, with Western Sydney University established in the 1980s. The surrounding land uses include the Richmond RAAF base, Rock and Dirt Recycling, rural living properties, and a waste management facility.

Numerous environmental investigations have been completed at the site, centred around the proposed Centre of Excellence (CoE) in the centre of site (south of the student accommodation). These investigations identified (among other contaminants) PFAS concentrations within soil, groundwater, and surface water present at the site. The source of the PFAS contaminations is unknown at the time of reporting, although is suspected to be the result of imported fill utilised for the construction of the student housing (immediately north of the proposed CoE area) in 2011-2012.

Limited sampling outside the proposed area for the CoE has been undertaken at the site. It is understood that WSU wish to undertake further sampling to assess the potential for side wide PFAS contamination, triggering this SAQP and subsequent investigation.

1.2 Objectives and Scope of Works

The objective of this SAQP is to provide an investigative framework to assess the broader area of the WSU Hawkesbury Campus for PFAS contamination to assist WSU for planning future land use scenarios at the site.

The scope of works for this SAQP has been provided by WSU and includes:

- Review of relevant historical reports.
- Prepare the Data Quality Objectives (DQOs) developed for the investigation.
- Outline the sampling methodologies and quality assurances and quality control (QA/QC) program to be undertaken during the investigation.
- Provision of this SAQP.

The investigative scope for this project is limited to PFAS, and no other contaminant of potential concern (CoPC) for the site.

This investigation is preliminary in nature with the sampling plan provided by WSU, and does not meet the sampling density prescribed in the NSW EPA Sampling Design Guidelines (2022). Given the objective of the investigation is to assist with future land use planning, the scope of works is considered acceptable for this preliminary stage.

2. SITE IDENTIFICATION AND SETTING

2.1 Site Identification

The site identification is outlined in **Table 1**.

Table 1 – Site Identification

Detail	Information
Street Address:	2 College Street, Richmond NSW 2753
Lot and DP:	Lot 2 of DP1051798
Approximate Investigation Area:	14km^2
Current Site Use:	University
Current Zoning:	The site contains multiple different zones: • RU2: Rural Landscape • SP1: Education Agriculture • SP2: Infrastructure • SP1: Special Activities • C2: Environmental Conservation
Local Council:	Hawkesbury City Council
Local Statutory Controls:	Hawkesbury Council Local Environmental Plan (LEP) 2012
Surrounding Land Use:	**North:** low density residential properties, East Richmond Zone Substation, Richmond Water Recycling Plant, Richmond Gold Club, and RAAF Base Richmond. **South:** rural residential properties, Richmond Race Club, Hawkesbury City Waste Management Facility. **East:** low density and rural residential properties, undeveloped lots, Rock & Dirt Recycling Facility, Hawkesbury Showground. **West:** low density and rural residential properties, undeveloped and primary produce lots.

2.2 Site Environmental Setting

The site environmental setting has been taken from the Aurecon Stage 2 Environmental Site Assessment (ref: P522682_Western Sydney university Hawkesbury DSI_230623_final) (Aurecon, 2023) and is present in **Table 2**.

Table 2 – Site Environmental Setting

Detail	Information
Site Setting & Geology:	A review of the NSW Seamless Geology (available through MinView, State of NSW) indicates the CoE is underlain by Alluvial terrace deposits - high-stand facies. The broader Western campus is underlain by Alluvial terrace deposits - high-stand facies, Londonderry Clay, and Alluvium deposits. Alluvial terrace deposits - high-stand facies is a geological unit typically consisting of high-level terrace deposits of sand and gravel. Londonderry Clay is a geological unit typically consisting of clay, patches of ferruginised,

Detail	Information
	consolidated sand. Alluvium deposits typically consists of unconsolidated alluvial clay, silt, sand, and gravel deposits. Previous investigations (DP, 2021a) indicated that soils across the CoE generally consists of silty sand topsoil to depths of between 0.1 mBGL to 0.9 mBGL overlain by sands to depths of between 3.9 mBGL and 4,8 mBGL and clay to depth.
Acid Sulfate Soils:	A review of information available through both the NSW OEH (eSPADE 2.0) and the Australia Soil Resource Information System (ASRIS) indicated that the CoE and broader Western campus are in an area with no acid sulfate soils (ASS) risk data.
Salinity:	A review of the Western Sydney Hydrogeological Landscapes Land Salinity Map available through the OEH, Department of Primary Industries and the Geological Survey of New South Wales was conducted. The review indicated that the CoE and broader Western campus are within an area of moderate salinity potential.
Hydrology and Drainage:	Given the relatively flat nature of the site, the majority of rainfall and surface water at the site is expected to infiltrate into the unsealed soils. Rainfall in areas with higher clay content in soils are expected to form localised pooling and surface water runoff during heavier or prolonged periods of rainfall. It is noted that the site is located within the 1% annual exceedance probability (AEP) floodplain of the Hawkesbury River (Hawkesbury City Council, 2011). In areas of hardstand, surface water is expected to flow into the onsite stormwater system.
Hydrogeology:	The direction of groundwater flow is likely to be controlled by the proximity to local surface water bodies and areas of higher permeability alluvium. Regional groundwater flow direction is expected to be consistent with the topography, flowing generally towards the east and north-east towards unnamed tributary creeks which flow into Rickabys Creek and eventually the Hawkesbury River. A review of information available through the Bureau of Meteorology Australian Groundwater Explorer undertaken by Aurecon indicated eight registered groundwater monitoring bores within broader Western campus. None were located within the former CoE area. Groundwater was encountered in five of the wells located around the perimeter of the Hawkesbury City Waste Management Facility and summarised below: • GW104755: standing water level (SWL) at 2.3m below ground level (mbgl). Water bearing zone (WBZ) encountered at 4.5-7.10mbgl. • GW104754: SWL at 3.001mbgl. WBZ encountered at 5.30-7.60mbgl. • GW104753: SWL at 7.830mbgl. WBZ encountered at 10.80-15.50mbgl. • GW104740: SWL at 11.640mbgl. WBZ encountered at 13.50-16.50mbgl. • GW104741: SWL at 9.624mbgl. WBZ encountered at 11.00-15.00mbgl. Groundwater was observed during a geotechnical investigation in the former CoE area (Douglas Partners, 2021a) at depths of between 0.3 mbgl and 2.5 mbgl in nine of 11 wells installed. Two wells were dry. The report noted that it was likely that the groundwater encountered were representative of perched water bodies. Douglas Partners also noted that given that the site is a floodplain, there is a reasonable likelihood that groundwater is present at shallow depths, likely as perched water.
Sensitive Receptors	The sensitive receptors for the site are considered to include: • The Rickabys Creek approximately 730m east of the site. • The Hawkesbury River approximately 3.5km to the north. • Unnamed tributaries in the eastern portion of site. • Aged care facility to the south west of the student residences. • Childcare facility in the centre of the WSU Campus.

3. DATA QUALITY OBJECTIVES

In determining the quality of data needed to achieve the objective in assessing the site for the presence of PFAS contamination, Geo-Logix has undertaken the seven-step process to develop the DQOs in accordance with Appendix B, Schedule of the National Environment Protection Measure 1999 (NEPM, amended 2013).

3.1 Step 1: State the Problem

PFAS contamination has been identified in limited areas of the site (CoE) in soil, groundwater, and surface water. There is possibility for PFAS to be present across the broader WSU Hawkesbury Campus which may impact upon future planning decisions across the campus.

3.2 Identify the Decisions

The investigation decision states:

- Determine if PFAS is present at concentrations above the adopted Tier 1 criteria across the broader WSU Hawkesbury campus in either soil, groundwater, or surface water.

3.3 Step 3: Identify Inputs into the Decisions

The inputs for various medias the study are outlined in Table 3.

Table 3 – Inputs for Various Media

Media	Input
Soil	• Borehole sampling from predetermined locations by WSU. • Field logging borehole soil sample locations. • Soil sample laboratory analytical data • Isopleth maps of soil PFAS contaminant distribution in soil.
Groundwater	• Installation of 75 new groundwater wells. • Well elevation survey. • Groundwater gauging and potentiometric maps. • Groundwater sampling field data. • Groundwater sample laboratory analysis. • Groundwater PFAS isopleth map. • Comparison of analytical data against freshwater ecosystem protection values.
Surface Water	• Surface water samples from 12 locations. • Surface water sampling field data. • Surface water sampling laboratory analysis. • Comparison of analytical data against freshwater ecosystem protection values.

3.4 Step 4: Define the Study Boundaries

The lateral boundary of the study is the lot boundary (Figure 2). The vertical boundary of the study is first encountered groundwater (shallow or deep regional aquifer). The temporal boundary of the study is limited to the days onsite during the investigation.

3.5 Step 5: Develop a Decision Rule

The decision rule is qualitative and not probability based.

- The assessment findings suggest there is no widespread PFAS contamination to soil or first encountered groundwater.

PFAS contamination to the shallow the regional deep aquifer beneath the centre of the site has been defined.

As PFAS contamination will arise from top down processes first groundwater is to be targeted, whether that is perched shallow water, or in its absence, deep regional groundwater.

3.6 Step 6: Specify Limits on Decision Errors

The study decisions are not probability-based decisions. Therefore, the acceptable limit for making decision errors cannot be quantified to a statistical level of significance.

Sampling and measurement error are referred to as 'total study error'. Total study error is minimised by the following actions:

- Implementing accepted sample collection, preservation and transportation methods in accordance with NEPM or other international guidance documents;
- Implementing acceptable Data Quality Indicators (DQIs) of precision, accuracy, representativeness, comparability, completeness as defined by NEPM; and
- Implementing robust field and laboratory Quality Control/Quality Assurance (QA/QC) procedures in accordance with NEPM and AS 4482.1–2005.

3.7 Step 7: Optimise the Design for Obtaining Data

The investigation design has been optimised by the following:

- Review of the provided previous environmental investigations.
- Review of the provided historical soil, groundwater, and surface water data.

4. SAMPLING PLAN

4.1 Groundwater and Soil Sampling Plan

The sampling plan and locations have been preselected by WSU, with the objective to target the wider WSU campus as a whole for the purpose of future land use planning. The proposed sampling strategy includes:

- 25 boreholes to 6mbgl and installation of groundwater monitoring wells to target shallow perched groundwater.
- 10 boreholes to 8mbgl and installation of groundwater monitoring wells to target the deeper regional aquifer.
- 8 boreholes to 10mbgl and installation of groundwater monitoring wells to target the deeper regional aquifer.
- 9 boreholes to 12mbgl and installation of groundwater monitoring wells to target the deeper regional aquifer.
- 19 boreholes to 14mbgl and installation of groundwater monitoring wells to target the deeper regional aquifer.
- 4 boreholes to 16mbgl and installation of groundwater monitoring wells to target the deeper regional aquifer.

A total of two soil samples will be collected per borehole for the analytical suite outlined in Table 4. The sampling plan is provided by WSU is shown in Appendix A and outlined in Figure 2.

NB:

Geo-Logix will drill to first groundwater an install a monitoring well, in some instances that may include shallow perched water, or in its absence the deep regional groundwater. The above well depths have been suggested by WSU. The location of each well has been provided, however there is no explanation as to why that well location has been identified and to what depth the well should be drilled. On this basis Geo-Logix has assumed that first groundwater is to be intersected and well installed what ever depth that may be at that particular location. Geo-Logix considers the well locations adequate to provide a broad PFAS contamination assessment of the site, noting that the site history or potential point sources of PFAS contamination have not been identified by incumbent site assessors.

4.2 Surface Water Sampling Plan

A total of 12 surface water samples will be collected from various dams and water courses across the broader WSU campus.

The sampling plan is provided by WSU is shown in Appendix A and outlined in Figure 2.

5. ANALYTICAL SUITE AND ASSESSMENT CRITERIA

5.1 Analytical Suite

The analytical suite for the project is outlined in Table 4.

Table 4 – Analytical Suite

	Sample Type	Sample Number	Analytical Suite
Soil	Primary	150	PFAS in Soil Analysis – 28 PFAS chemical analysis.
	Secondary	8	

	Sample Type	Sample Number	Analytical Suite
	Field Duplicates	8	
	Rinsate	22	PFAS in Water Analysis – 28 PFAS chemical analysis.
	(1/day)	(1/day)	
	(1/day)	(1/day)	
Groundwater	Primary	75	
	Secondary	4	
	Field Duplicates	4	
	Rinsate	8	
	Field Spike	4	
	Field Blank	4	
Surface Water	Primary	12	
	Secondary	2	
	Field Duplicates	2	
	Field Spike	1	
	Filed Blank	1	

5.2 Site Assessment Criteria

The adopted site assessment criteria are outlined in Table 5.

Table 5 – Adopted Site Assessment Criteria

Matrix	Criteria	Comment
Soil	PFAS National Environment Management Plan (NEMP) 2.0	PFAS NEMP 2.0 outlines the Human Health Investigation Levels (HIL) for differing land use scenarios. Given that produce is expected to be grown for human consumption at the site, HIL- A Low Density Residential Land Use to account for the bioaccumulation of PFAS compounds in agricultural produce.
		PFAS NEMP 2.0 outlines the Ecological Guideline Values for soil based on either direct or indirect exposure to PFAS. Given the soils are exposed across the site the ecological indirect exposure limit has been selected.
Groundwater and Surface Water	PFAS National Environment Management Plan (NEMP) 2.0	PFAS NEMP states that there may be cases where recreational water may be used more frequently than the assumptions underpinning the guidelines and may be longer in duration and high in ingestion risk compared to NHRMC assumptions. For such activities, more locally-appropriate recreational guidance based on actual event frequency should be considered. As the Hawkesbury River is used for recreational activities, these recreational guidelines have been adopted.

Matrix	Criteria	Comment
		Given the closest receiving water body (Hawkesbury River) is a freshwater environment, freshwater ecological criteria have been selected. The Hawkesbury River is considered to be a slightly to moderately disturbed ecosystem, with 95% species protection criteria considered acceptable for groundwater assessment. If it is determined that groundwater is discharging to surface waters the 99% criteria will be adopted. Drinking water guidelines have not been considered due to no use of groundwater for drinking water purposes on the site

6. SAMPLING METHODOLOGIES

Given the numerous previous environmental investigations with different naming conventions, Geo-Logix will utilise the following naming convention to prevent confusion:

- The prefix for each well will be as follows:
    - GW10X for shallow groundwater wells (≤6mbg).
    - GW20X for deep groundwater wells (≥6mbg)
- The prefix for each soil sample taken from boreholes will be as follows:
    - GX10X-sample depth (m) from shallow bores.
    - GX20X – sample depth (m) from deep bores.
- The prefix for each surface water sample will be DW0X.

6.1 Handling and Processing

The general handling and processing of the samples should be in line with the PFAS NEMP 2.0 sampling procedure and is outlined below:

- Prior to sampling, personnel must wash their hands with plain soap and rinse thoroughly in tap water before donning a clean, new pair of nitrile gloves.
- Attention should be given to the range of products that can cause PFAS contamination of samples, including new clothing (must be washed at least three times prior to be worn onsite for sampling purposes), footwear, PPE and treated fabrics, stain and water resistant products, sunscreen, moisturisers, cosmetics, fast food wrappers, polytetrafluoroethylene (PRFE) materials (such as Teflon), sampling containers with PTFE-containing lids, foils, glazed ceramics, stickers and labels, inks, sticky notes, waterproof papers, drilling fluids, decontamination solutions, and reusable freezer blocks. These products should not be worn or used during any stage of sampling (at site, during transportation etc.) where sample contamination could affect analytical results.
- Samples exposure to light must be minimised, with all samples double bagged (where required).
- Chemical or gel-based coolant products to chill samples following sample collection is not recommended.
- The required sample vessels for each media are outlined in Table 6.

Table 6 – Required Sample Vessels per Media

Media	Sampling Vessel
Soil	High density polyethylene (HDPE) sample jars, minimal headspace.
Groundwater and Surface Water	2-250mL HDPE plastic bottles pre-preserved with 1.25g Trizma.

6.2 Groundwater Well Installation Method

Groundwater wells will be installed in accordance with Minimum Construction Requirements for Water Bores in Australia, 3rd Edition (NUDLC, 2012) and PFAS NEMP 2.0 decontamination/sampling requirements.

- Groundwater wells targeting first groundwater will be drilled using a track mounted drilling rig equipped with solid stem auger. Prior to the first borehole, and between each subsequent borehole, the augers will be decontaminated using a PFAS free decontamination detergent/PFAS free water. All fluids utilised for drilling must be PFAS free. Decontamination of drilling equipment must avoid detergents unless they are PFAS-free, with no equipment to be used if it is coated with PTFE.
- The wells are to be constructed of Class 18 50mm PVC pipe. Slotted PVC casing up to 3 m in length is installed in each boring.
- A sand filter pack will be placed from the base of the borings to 0.5 m above the top of the slotted PVC casing and sealed with 1 m of hydrated bentonite pellets above the sand pack. A cement grout is used to seal the borehole annulus to surface. The wells will be finished to grade with a concreted traffic rated road box and top of casing surveyed.
- Prior to well development, any personnel handling decontaminated well development equipment that directly contacts bore water must wash their hands with plain soap and rinse thoroughly with tap water before donning a clean, new pair of disposable nitrile gloves. A new pair of nitrile gloves must be worn for each well developed. Decontamination soaps must not be used unless confirmed to be free to fluoro-surfactants.
- Wells are to be developed by removing a minimum of three well volumes with a dedicated disposal bailer until either water quality parameters stabilise, or purge water begins to clear.
- Following completion of well development, purged groundwater must be treated as PFAS-contaminated waste (i.e., assumed to be contaminated until verified, and then managed accordingly.
- A Hydrasleeve passive sampler will be installed in each groundwater well post well development.
- Rinsate samples should be collected if there is any doubt about whether or not materials or personnel are PFAS free, including when detergents are being used and secondary containers.

6.3 Groundwater Well Soil Sampling Method

During well installation the following soil sampling will be performed:

- A soil sample will be retrieved approximately every 1 meter above the water table, or where distinct changes in lithology are noted, for soil logging purposes.
- Two soil samples per bore, a sample of shallow soil (0.5 – 1m) and soil at depth (3m) will be collected for PFAS analysis.
- Soil samples will be placed into laboratory supplied HDPE plastic jars (no glass jars with Teflon-lined lids are to be used) with unique sample identification numbers, and immediately chilled on blue ice (no in an esky). The esky will be transferred to a NATA accredited laboratory (Eurofins) under chain of custody conditions for analysis.
- Regent blanks and reagent spikes will be included on occasion to confirm transport processes are adequate to preserve sample integrity.

6.4 Groundwater Sampling Method

Approximately 7 days after installation and well development, newly installed wells will be sampled.

- Well caps will be removed with the depth to the SWL gauged using an oil/water interface probe. Following the well gauging, the Hydrasleeve will be retrieved, the groundwater sample collected, and water quality parameters measured.
- Groundwater samples will be collected in the appropriate laboratory prepared sample vessels. For each sample, the required minimum volume of groundwater is 250mL per USEPA (2009).
- Regent blanks and reagent spikes will be included on occasion to confirm transport processes are adequate to preserve sample integrity.

6.5 Surface Water Sample Method

An extendable pole with a new 600ml unpreserved HDPE sample bottle attached will be used at each location to collect the water sample. The sample vessel will be changed at each sampling location.

The water sample near the base of the creek will be selected. A subsample will be split for measuring the following water quality parameters:

- pH / Temperature.
- Dissolved Oxygen.
- Redox.
- Electrical conductivity

7. DATA QUALITY INDICATORS

QC/QA will be tested by review of data against Data Quality Indicators (DQIs) to ensure data precision, accuracy, representativeness, comparability, and completeness. A summary of DQIs for samples and analyses are presented in Table 7.

Table 7 – Data Quality Indicators

Data Quality Objectives	Frequency	Data Quality Indicator
Precision		
Blind replicate samples	1 per 20 samples	RPD <50%
Split samples	1 per 20 samples	RPD <50%
Accuracy		
Surrogate spikes	All organic analyses	General analytes recovery of 70–130%
Laboratory control samples	1 per batch	General analytes recovery of 70–130%
Matrix spikes	1 per batch	General analytes recovery of 70–130%
Analysis blank	1 per batch	Non-detect
Representativeness		
Samples stored at 4°C	All samples	-
Samples analysed within specified holding times	All samples	Organics 14 days/Inorganics 6 months
Trip spike	1 per batch	Not required (no volatile analysis)
Trip blank	1 per batch	Not required (no volatile analysis)
Rinsate blanks	1 per day	Non-detect
Samples transported under COC conditions	All samples	-
Comparability		
NATA approved laboratory analytical method	All samples, all analytes	-
Consistent sampling techniques	All samples	-
Appropriate laboratory reporting limits	All samples, all analytes	-
Completeness		
Geo-Logix Standard Field Templates Used	All samples	-
Appropriate Sampling to Support the Objectives	-	Meets minimum sampling requirements

AS 4482.1–2005 (Australian Standard, 2005) indicate an acceptable RPD range of 30–50%, and that the variation can be expected to be higher for organic analysis than inorganics, and for low concentrations of analytes.

Field and Laboratory QA/QC procedures will be conducted in accordance with NEPC (2013) and AS 4482.1–2005.

7.1 Field QA/QC

For all analytes, field sample QA/QC will be conducted in accordance with AS 4482.1–2005 (Australian Standard, 2005) and consist of the following:

- Sample Duplicates – 1 per 20 samples.
- Sample Triplicates (Secondary Lab) – 1 per 20 samples.
- Sample equipment rinsate sample – approximately 1 per day / or as needed to confirm sample decon methodology.

7.2 Field Data QA/QC Acceptance Criteria

The acceptance criteria for QA/QC samples are detailed in Table 8.

Table 8 – Field QA/QC Acceptance Criteria

Quality Control Sample	Minimum Number of Samples	Data Quality Indicator
Duplicate sample	1 per 20 samples	50% RPD
Triplicate sample	1 per 20 samples	50% RPD
Rinsate blank	1 per day / as needed	No detectable concentrations

In the event the acceptance criteria are not met, the variation will be taken into consideration and its implications assessed in regard to the context of the investigation.

7.3 Laboratory QA/QC

The following laboratories are proposed to be engaged to undertake soil, groundwater, and surface water sample analysis:

- Primary Laboratory – Eurofins Environment Testing Australia Pty Ltd, Lane Cove (Sydney) laboratory (NATA accreditation number 1261, site number 18217); and
- Secondary Laboratory – Eurofins Environment Testing Australia Pty Ltd, Oakleigh (Melbourne) Laboratory (NATA accreditation number 1261, site number 1254).

The primary and secondary laboratories must comply with the minimum QA procedures documented in Schedule B(3) in NEPC (2013*) National Environmental Protection (Assessment of Site Contamination) Measure* and include but not be limited to:

- At least one analysis blank per batch;
- Duplicate analysis at a rate of one per batch or one per ten samples, whichever is smaller;
- Laboratory Control Samples at a rate of one per batch;
- Matrix spikes; and
- Surrogate Spikes.

The acceptance criteria for laboratory QC is presented in Table 9.

Table 9 – Laboratory Quality Control Criteria

Quality Control Sample	Data Quality Indicator
Matrix Spike	General analytes recovery of 70–130% / Metals recovery of 70–130%
Laboratory Control Sample	General analytes recovery of 70–130% / Metals recovery of 70–130%
Surrogate Sample	Results compared to analyte specific criteria / Metals recovery of 70–130%

Quality Control Sample	Data Quality Indicator
Method Blank	< Laboratory Reporting Limits
Sample Duplicate	PFAS
	RPD of 0–50% (>10xPQL) RPD of 0–75% (5–10xPQL) RPD of 0–100% (<5xPQL)

RPD = Relative Percent Difference

8. REPORTING

At the completion of the works, Geo-Logix will prepare an Environmental Site Assessment Report in general accordance with the following guidelines:

- NSW EPA (2020) Consultants Reporting on Contaminated Land guidelines.
- ASC NEPM Schedule A & B.

The general outline of the report will contain the following:

- Introduction and objectives.
- Site setting.
- Summary of site history.
- Summary of historical investigations and findings.
- Preliminary Conceptual Site Model.
- DQOs.
- Sampling Methodologies.
- Assessment criteria.
- Tabulated soil, groundwater, and surface water analytical results.
- Figure identifying sampling locations.
- Discussion, including any deviations from the SAQP and comparison of results to Tier 1 assessment criteria.
- Revised Conceptual Site Model.
- Conclusion and Recommendations.

9. LIMITATIONS

This report should be read in full, and no executive summary, conclusion or other section of the report may be used or relied on in isolation or taken as representative of the report as a whole. No responsibility is accepted by Geo-Logix, and any duty of care that may arise but for this statement is precluded, in relation to any use of any part of this report other than on this basis.

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Geo-Logix has prepared this report with the diligence, care and skill which a reasonable person would expect from a reputable environmental consultancy.

10. REFERENCES

Aurecon (16/12/2022), Stage 1 Environmental Site Assessment, Western Sydney University (Hawkesbury Campus)
Ref: P522692_WSU Hawkesbury ESA_Final_161222 3451-2743-8370 v.1

Aurecon (23/06/2023), Stage 2 Detailed Site Investigation – Campus Core Delineation, Western Sydney University (Hawkesbury Campus)
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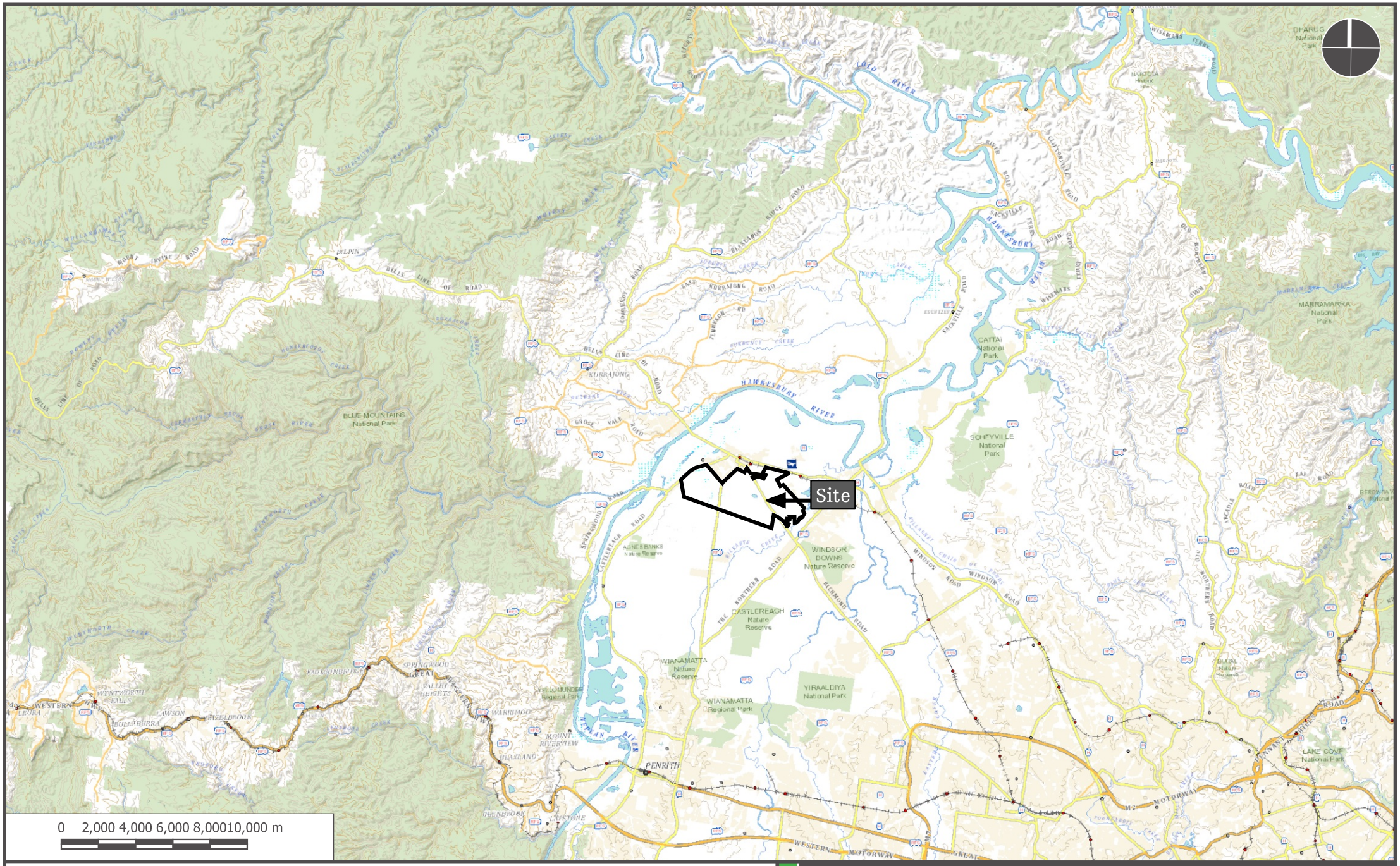
Aurecon (28/06/2023), Stage 3 Environmental Site Assessment – Alternative COE Site, Western Sydney University (Hawkesbury Campus)
Ref: P522692_WSU Hawkesbury ESA_Alternative Site_Final_300623

Australian Standards (2005) AS 4482.1—2005, Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds.

NEPC (1999, Amended) National Environmental Protection Council (Assessment of Site Contamination) Measure 1999 (as amended 2013), National Environmental Protection Council, April 2013.

Heads of EPA (HEPA), PFAS National Environmental Management Plan (NEMP) Version 2.0, January 2020.

FIGURES



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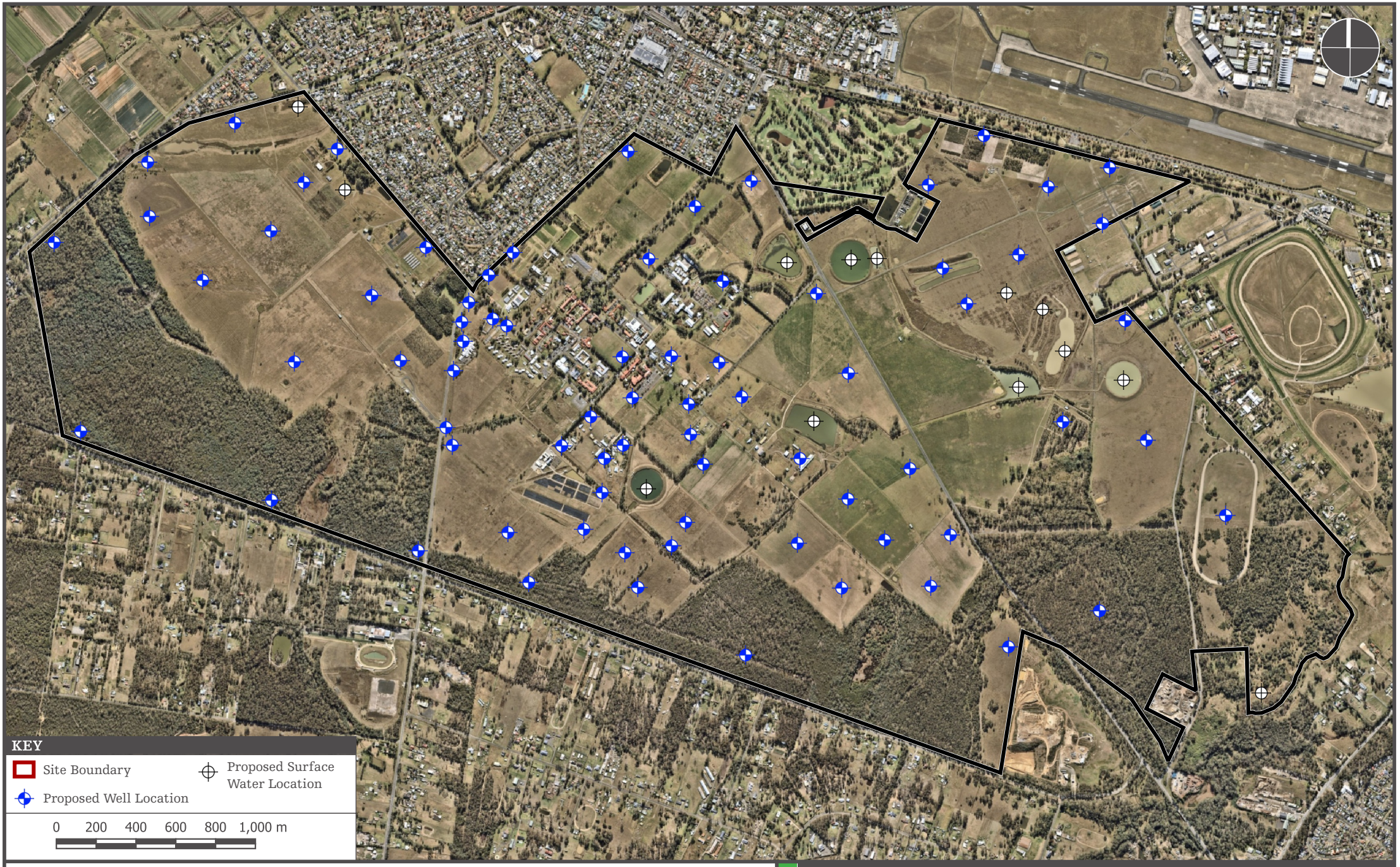
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SITE LOCATION

Sampling Analysis and Quality Plan
2 College Street, Richmond NSW

Project No. 2301034

Figure 1



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SITE MAP

Sampling Analysis and Quality Plan
2 College Street, Richmond NSW

Project No. 2301034

Figure 2

ATTACHMENT A



Western Sydney University
Hawkesbury campus

Stage 1
Initial testing (complete)

Key

- Stage 1 - completed



Western Sydney University
Hawkesbury campus

Stage 4
Extensive campus testing
Campus core and farm

Key

- Stage 1 - completed
- Stage 4 - proposed
- Stage 4 - proposed
- Stage 4 - commercial tenancy
- Stage 4 - farm / other
- Stage 4 - water body
- Stage 4 - additional plume testing



Western Sydney University
Hawkesbury campus

Stage 4
Extensive campus testing
Entire estate

Key

- Stage 1 - completed
- Stage 4 - proposed
- Stage 4 - proposed
- Stage 4 - commercial tenancy
- Stage 4 - farm / other
- Stage 4 - water body
- Stage 4 - additional plume testing

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APPENDIX G

Borehole Record: GW101

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,914.24	**Date Drilled:** 21/08/2023
Location: Richmond NSW	Northing: 6,279,385.74	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.13(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Tiffany Mabbott/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	21	GX101/0.2-0.3	CL		Silty CLAY (CL) : soft, low plasticity, dark yellowish brown (10yr/4/4), with fine to medium grained sand, inorganic, moist, no odour.	M		Cement
	1	20	GX101/1.0-1.1	CL		Sandy CLAY (CL) : soft, low plasticity, red (10r/4/8), fine grained sand, moist, 20% sand | 80% fines .			
	2	19	GX101/2.0-2.1	CL		Silty to sandy CLAY (CL) : soft, low plasticity, light red (10r/6/8), fine to medium grained sand, moist, 45% sand | 55% fines .			
	3	18		SC		Clayey to silty SAND (SC) : light red (10r/6/8), very loose, fine to medium grained, moist, 55% sand | 45% fines .			
	4	17		CI		Silty to sandy CLAY (CI) : soft, medium plasticity, light red (10r/6/8), fine grained sand, moist, 25% sand | 75% fines, potential water at 5.			50mm PVC Solid
	5	16							
	6	15							
	7	14							Bentonite
	8	13							
	9	12							sand pack
▼				SC		Clayey SAND (SC) : dark yellowish brown (10yr/4/6), loose, medium	W		50mm PVC Slotted

Borehole Record: GW101

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,914.24	**Date Drilled:** 21/08/2023
Location: Richmond NSW	Northing: 6,279,385.74	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.13(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Tiffany Mabbott/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	11	11 – 10		SC		Clayey SAND (SC) : dark yellowish brown (10yr/4/6), loose, medium grained, wet, 60% sand | 40% fines .	W		sand pack; 50mm PVC Slotted
	12 – 19	9 – 2				**GW101 Terminated at 11.7m (target depth reached)**			

Borehole Record: GW102

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,360.90	**Date Drilled:** 21/08/2023
Location: Richmond NSW	Northing: 6,278,889.27	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 24.46(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Tiffany Mabbott/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	24	GX102/0.1-0.2	CL		Sandy CLAY (CL) : soft, low plasticity, light reddish brown (5yr/6/4), fine grained sand, moist, 10% sand | 90% fines .	M		
	1	23	GX102/1.0-1.1						
	2	22		CL		Sandy CLAY (CL) : hard, low plasticity, red (10r/4/6), medium grained sand, moist, 25% sand | 75% fines.		Very hard/cemented	Cement
	3	21		CL		As above, but stiff.			
	4	20		SC		Clayey SAND (SC) : light red (10r/6/8), loose, medium to coarse grained, with medium sized gravel, moist, 5% gravel | 60% sand | 35% fines.			50mm PVC Solid
	5	19		CI		Sandy CLAY (CI) : firm, medium plasticity, light red (10r/6/8), fine grained sand, moist, 20% sand | 80% fines .			
	6	18		CH		CLAY (CH) : stiff, high plasticity, light red (10r/6/6), moist, 100% fines .			
	7	17							
	8	16							Bentonite
	9	15							sand pack

Borehole Record: GW102

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,360.90	**Date Drilled:** 21/08/2023
Location: Richmond NSW	Northing: 6,278,889.27	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 24.46(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Tiffany Mabbott/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	14		CH		CLAY (CH) : stiff, high plasticity, light red (10r/6/6), moist, 100% fines			50mm PVC Solid
▽	12	13		CH		As above, but wet.	W	Very moist, suspected water strike	sand pack
▼	13	12							50mm PVC Slotted
		11							Collapse
	14	10				**GW102 Terminated at 13.5m (target depth reached)**			
	15	9							
	16	8							
	17	7							
	18	6							
	19	5							

Borehole Record: GW103

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,585.09	**Date Drilled:** 22/08/2023
Location: Richmond NSW	Northing: 6,278,969.29	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 25.04(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Tiffany Mabbott/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	25	GX103/0.0-0.1	SC		Clayey SAND (SC) : weak red (10r/5/4), loose, medium grained, moist, 65% sand | 35% fines .	M		
	1	24	GX103/1.1-1.2 DS1/TS1	SC		Clayey SAND (SC) : light red (10r/6/6), loose, medium grained, with fine to medium sized gravel, moist, 3% gravel | 57% sand | 40% fines.			
			GX103/1.5-1.6	CL		Sandy CLAY (CL) : firm, low plasticity, pale yellow (5y /8/4), medium grained sand, moist, 35% sand | 65% fines .			
	2	23							
	3	22		CI		Sandy CLAY (CI) : firm, medium plasticity, yellow (10yr/8/6), fine grained sand, moist, 25% sand | 75% fines .			Cement
	4	21							
	5	20		CI		CLAY (CI) : firm, medium plasticity, light red (10r/6/6), with fine grained sand, moist, 10% sand | 90% fines .			50mm PVC Solid
	6	19							
	7	18		CL		Sandy CLAY (CL) : firm, low plasticity, pale yellow (5y /8/4), medium grained sand, moist, 30% sand | 70% fines .			
	8	17		CI		Sandy CLAY (CI) : hard, medium plasticity, light red (10r/6/6), medium grained sand, moist, 25% sand | 75% fines .			
				CI		CLAY (CI) : soft, medium plasticity, brownish yellow (10yr/6/6), trace fine grained sand, moist, 10% sand | 90% fines.			
	9	16		CH		CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), trace fine grained sand, moist, 5% sand | 95% fines .			

Borehole Record: GW103

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,585.09	**Date Drilled:** 22/08/2023
Location: Richmond NSW	Northing: 6,278,969.29	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 25.04(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Tiffany Mabbott/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	14		CH		CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), trace fine grained sand, moist, 5% sand | 95% fines .			Cement, Bentonite, 50mm PVC Solid
	12	13							sand pack
	13	12							50mm PVC Slotted
▼	14	11		CL		Sandy CLAY (CL) : soft, low plasticity, light red (10r/6/6), fine to medium grained sand, wet, 30% sand | 70% fines.	W	Hole collapse back to 15m	
▽	15	10							Backfill
	16	9							
	17	8							
	18	7				**GW103 Terminated at 18m (Target Depth Reached)**			
	19	6							

Borehole Record: GW104

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,402.22	**Date Drilled:** 23/08/2023
Location: Richmond NSW	Northing: 6,279,513.52	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.13(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	22	GX104/0.1-0.2	CL		Silty to sandy CLAY (CL) : soft, low plasticity, yellowish red (5yr/5/6), fine grained sand, moist, 25% sand | 75% fines .	M		
	1	21	GX104/1.1-1.2	CL		Sandy CLAY (CL) : soft, low plasticity, reddish gray (5yr/5/2), fine to medium grained sand, with fine sized gravel, moist, 5% gravel | 25% sand | 70% fines.			
				CI		CLAY (CI) : firm, medium plasticity, light red (10r/6/8), trace fine grained sand, moist, 5% sand | 95% fines .			
			GX104/1.5-1.6						
	2	20		CL		Sandy CLAY (CL) : soft, low plasticity, weak red (10r/4/3), fine to medium grained sand, moist, 30% sand | 70% fines .			
	3	19		SC		Clayey SAND (SC) : red (10r/4/6), loose, fine to medium grained, moist, 60% sand | 40% fines .			Cement
	4	18							
	5	17							50mm PVC Solid
	6	16							
	7	15		SP		SAND (SP) : light reddish brown (5yr/6/4), loose, medium grained, with fine sized gravel, with low plasticity clay, moist, 6% gravel | 80% sand | 15% fines.			
	8	14							
	9	13							Bentonite

Borehole Record: GW104

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,402.22	**Date Drilled:** 23/08/2023
Location: Richmond NSW	Northing: 6,279,513.52	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.13(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
▼	11	12		SP		SAND (SP) : light reddish brown (5yr/6/4), loose, medium grained, with fine sized gravel, with low plasticity clay, moist, 6% gravel | 80% sand | 15% fines.			Bentonite
	12	11							50mm PVC Solid
▽	13	10		SC		Clayey SAND (SC) : red (10r/4/6), loose, medium grained, wet, 70% sand | 30% fines .	W		sand pack
	14	9							50mm PVC Slotted
	15	8							Backfill
	16	7				**GW104 Terminated at 15m (Target Depth Reached)**			
	17	6							
	18	5							
	19	4							
		3							

Borehole Record: GW105

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,747.88	**Date Drilled:** 23/08/2023
Location: Richmond NSW	Northing: 6,279,220.05	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.48(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	22	GX105/0.3-0.4	SC		Clayey SAND (SC) : dusky red (10r/3/4), loose, medium grained, moist, 70% sand | 30% fines .	M		
	1	21	GX105/1.0-1.1	SC		As above, but red (10r/4/8).			
	2	20	GX105/1.9-2.0	SC		Clayey SAND (SC) : red (10r/4/6), medium dense, medium to coarse grained, with medium sized gravel, moist, 10% gravel | 55% sand | 35% fines.			
	3	19		CL		CLAY (CL) : stiff, low plasticity, light red (10r/6/6), with fine grained sand, trace fine grained sand, moist, 5% sand | 95% fines .			Cement
	4	18							
	5	17							50mm PVC Solid
	6	16							
	7	15							
	8	14							
	9	13							Bentonite

Borehole Record: GW105

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,747.88	**Date Drilled:** 23/08/2023
Location: Richmond NSW	Northing: 6,279,220.05	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.48(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
▼	11	12		CL		CLAY (CL) : stiff, low plasticity, light red (10r/6/6), with fine grained sand, trace fine grained sand, moist, 5% sand | 95% fines .			50mm PVC Solid
	12	11							sand pack
	13	10							
	14	9		CL		Sandy CLAY (CL) : soft, low plasticity, light red (10r/6/6), medium grained sand, with fine sized gravel, wet, 2% gravel | 38% sand | 60% fines.	W		50mm PVC Slotted
▽	15	8							Collapse
	16	7				**GW105 Terminated at 15m (Refusal on gravel)**			
	17	6							
	18	5							
	19	4							
		3							

Borehole Record: GW106

Project: Richmond - Privileged and Confidential	**Position:** Easting: 288,486.41	**Date Drilled:** 24/08/2023
Location: Richmond NSW	Northing: 6,277,921.44	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	20	GX106/0.2-0.3	CL		Sandy CLAY (CL) : hard, low plasticity, pinkish white (10r/8/2), fine grained sand, moist, 5% gravel | 20% sand | 75% fines.	M	Charcoal observed at 0.8m. Potentially weathered mudstone/siltstone.	
	1	19	GX106/0.9-1.0						
			GX106/1.4-1.5	CI		CLAY (CI) : hard, medium plasticity, pinkish gray (5yr/7/2), trace fine grained sand, moist, 5% sand | 95% fines .			
	2	18		CI		As above, but stiff, light red (10r/6/8).			Cement
	3	17		CI		As above, but with white mottles.		White mottle in clay.	
	4	16							
	5	15		CI		CLAY (CI) : very stiff, medium plasticity, light red (10r/6/8), trace fine grained sand, moist, 5% sand | 95% fines .			50mm PVC Solid
	6	14							
	7	13							
	8	12							Bentonite
	9	11		CI		As above, but firm.		Stopped and waited for potential groundwater, none after 30 minutes	sand pack

Borehole Record: GW106

Project: Richmond - Privileged and Confidential	**Position:** Easting: 288,486.41	**Date Drilled:** 24/08/2023
Location: Richmond NSW	Northing: 6,277,921.44	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	9		CI		As above, but firm.		Stopped and waited for potential groundwater, none after 30 minutes	50mm PVC Solid
▽	12	8		CL		Sandy CLAY (CL) : soft, low plasticity, light red (10r/6/6), fine to medium grained sand, wet to moist, 20% sand | 80% fines.	W-M	Increasing moisture at 11.5m, wet at 12m.	sand pack 50mm PVC Slotted Backfill
	13	7							
	14	6				**GW106 Terminated at 14m (Target Depth Reached)**			
	15	5							
	16	4							
	17	3							
	18	2							
	19	1							

Borehole Record: GW107

Project: Richmond - Privileged and Confidential	**Position:** Easting: 288,595.83	**Date Drilled:** 24/08/2023
Location: Richmond NSW	Northing: 6,277,921.45	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.42(m)	**Drill Supplier**
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	23	GX107/0.0-0.1	CI		Sandy CLAY (CI) : very stiff, medium plasticity, reddish gray (5yr/5/2), fine grained sand, moist to dry, 20% sand | 80% fines .	M-D		
	1	22	GX107/1.1-1.2						
			GX107/1.5-1.6	CI		CLAY (CI) : very stiff, medium plasticity, light red (10r/6/6), trace fine grained sand, moist to dry, 5% sand | 95% fines .			
	2	21							
	3	20							Cement
	4	19		CI		As above, but red (10r/4/6), moist.	M		
	5	18							50mm PVC Solid
	6	17		CI		As above, but firm.			
	7	16							
	8	15		CI					
	9	14							

Borehole Record: GW107

Project: Richmond - Privileged and Confidential	**Position:** Easting: 288,595.83	**Date Drilled:** 24/08/2023
Location: Richmond NSW	Northing: 6,277,921.45	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.42(m)	**Drill Supplier**
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	13		CI		As above, but firm.			Cement
	12	12		CI		CLAY (CI) : firm, medium plasticity, light red (10r/6/6), trace fine grained sand, moist to dry, 5% sand | 95% fines .	M-D		50mm PVC Solid
	12								Bentonite
▼		11		ML		Silty to sandy CLAY (ML) : hard, non-plastic, light red (10r/6/6), fine grained sand, moist, 15% sand | 85% fines.	M	Very hard, potentially mudstone/siltstone.	
	13	10							
▽	14								sand pack
		9		CI		As above, but (CI) : stiff, medium plasticity.			50mm PVC Slotted
	15	8							
	16								
		7							
	17					**GW107 Terminated at 16.5m (Target Depth Reached)**			
		6							
	18								
		5							
	19								
		4							

Borehole Record: GW108

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,559.12	**Date Drilled:** 25/08/2023
Location: Richmond NSW	Northing: 6,277,569.63	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22	GX108/0.3-0.4	SM		Silty SAND (SM) : very pale brown (10yr/8/2), medium dense, fine grained, trace low plasticity clay, moist to dry, 60% sand | 40% fines.	M-D	Powder-like, not cohesive when wet.	
	1	21	GX108/1.0-1.1	CL		Sandy CLAY (CL) : hard to friable, low plasticity, very pale brown (10yr/8/3), fine grained sand, moist to dry, 30% sand | 70% fines .			
				CL-CI		Silty CLAY (CL-CI) : hard to friable, low to medium plasticity, very pale brown (10yr/8/3), with fine grained sand, moist to dry, 5% sand | 95% fines.			
	2	20	GX108/1.9-2.0	CI		Silty CLAY (CI) : hard, medium plasticity, brownish yellow (10yr/6/6), with fine grained sand, moist to dry, 5% sand | 95% fines .		Very hard, potentially weathered mudstone/siltstone	Cement
	3	19							
	4	18							
	5	17							50mm PVC Solid
	6	16							
	7	15							
	8	14		CI		As above, but stiff.		Slightly softer than above, waited but no groundwater.	
	9	13		CL-CI		Silty CLAY (CL-CI) : hard to friable, low to medium plasticity, brownish yellow (10yr/6/6), with fine grained sand, moist to dry, 5% sand | 95% fines.		Very hard, potentially weathered mudstone/siltstone	Bentonite

Borehole Record: GW108

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,559.12	**Date Drilled:** 25/08/2023
Location: Richmond NSW	Northing: 6,277,569.63	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	11		CL-CI		Silty CLAY (CL-CI) : hard to friable, low to medium plasticity, brownish yellow (10yr/6/6), with fine grained sand, moist to dry, 5% sand | 95% fines.		Very hard, potentially weathered mudstone/siltstone	50mm PVC Solid
▼									sand pack
▽	12	10		CI		Silty CLAY (CI) : soft, medium plasticity, brownish yellow (10yr/6/6), with fine grained sand, moist, 5% sand | 95% fines.	M		50mm PVC Slotted
	13	9							
	14	8							
	15	7							Collapse (null)
	16	6				**GW108 Terminated at 16m (Target depth Reached)**			
	17	5							
	18	4							
	19	3							

Borehole Record: GW109

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,298.81	**Date Drilled:** 28/08/2023
Location: Richmond NSW	Northing: 6,277,303.29	**Drill Rig** Ute rig
Loc Comment:	**Elevation:** 22.61(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22	GX109/10.1-0.2	SM		Silty SAND (SM) : very pale brown (10yr/8/2), loose, fine grained, with fine sized gravel, trace low plasticity clay, moist to dry, 2% gravel | 58% sand | 40% fines.	M-D		
	1		GX109/0.9-1.0	SM		As above, but dense.			
		21	GX109/1.2-1.3	SC		Clayey SAND (SC) : yellowish brown (10yr/5/4), very dense, fine to medium grained, moist, 65% sand | 35% fines.	M	Very hard/cemented.	
	2			CL		Sandy CLAY (CL) : hard, low plasticity, yellowish brown (10yr/5/4), fine to medium grained sand, moist, 45% sand | 55% fines .			
		20		CI		Sandy CLAY (CI) : stiff, medium plasticity, yellowish brown (10yr/5/4), medium grained sand, moist, 35% sand | 65% fines .			Cement
	3								
		19		CI		CLAY (CI) : very stiff, medium plasticity, yellowish brown (10yr/5/4), with fine grained sand, moist, 10% sand | 90% fines .			
	4			CI		As above, but soft.			
		18							50mm PVC Solid
	5			CI		CLAY (CI) : very stiff to hard, medium plasticity, yellowish brown (10yr/5/4), with fine grained sand, moist, 10% sand | 90% fines .			
		17							
	6								
		16							
	7								
		15		CI		CLAY (CI) : soft, medium plasticity, yellowish brown (10yr/5/4), moist, 10% sand | 90% fines .			
	8								
		14		CI		CLAY (CI) : hard, medium plasticity, yellowish brown (10yr/5/4), with fine grained sand, moist, 10% sand | 90% fines .			
	9								
		13							

Borehole Record: GW109

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,298.81	**Date Drilled:** 28/08/2023
Location: Richmond NSW	Northing: 6,277,303.29	**Drill Rig** Ute rig
Loc Comment:	**Elevation:** 22.61(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	12		CI		As above, but soft.			Cement
	12	11		CI		As above, but hard.			Bentonite; 50mm PVC Solid
▽	13	10		CL		Sandy CLAY (CL) : soft, low plasticity, yellowish brown (10yr/5/4), medium grained sand, wet to moist, 35% sand | 75% fines .	W-M		sand pack; 50mm PVC Slotted
	14	9							
	15	8				**GW109 Terminated at 15m (Target Depth Reached)**			
	16	7							
	17	6							
	18	5							
	19	4							
		3							

Borehole Record: GW110

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,689.25	**Date Drilled:** 28/08/2023
Location: Richmond NSW	Northing: 6,278,317.13	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.28(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	23	GX110/0.2-0.3	SM		Silty SAND (SM) : very pale brown (10yr/8/2), loose, fine grained, with fine sized gravel, trace low plasticity clay, moist, 10% gravel | 65% sand | 25% fines.	M		
	1	22	GX110/0.9-1.0	CI		CLAY (CI) : firm, medium plasticity, dark yellowish brown (10yr/4/4), with fine grained sand, moist, 20% sand | 80% fines .			
	2	21	GX110/1.5-1.6	CI		As above, but very stiff.			
	3	20		CL		CLAY (CL) : firm, low plasticity, dark yellowish brown (10yr/4/4), with fine grained sand, moist, 20% sand | 80% fines .			Cement
	4	19		CI		CLAY (CI) : stiff, medium plasticity, light red (10r/6/6), trace fine grained sand, moist, 10% sand | 90% fines .			50mm PVC Solid
	5	18							
	6	17							
	7	16							
	8	15							
	9	14							Bentonite

Borehole Record: GW110

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,689.25	**Date Drilled:** 28/08/2023
Location: Richmond NSW	Northing: 6,278,317.13	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.28(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
▼ ▽	11 – 13	13 – 11		CI		CLAY (CI) : stiff, medium plasticity, light red (10r/6/6), trace fine grained sand, moist, 10% sand | 90% fines .			Bentonite; 50mm PVC Solid
	12 – 14	12 – 10		CL		Sandy CLAY (CL) : soft, low plasticity, yellowish brown (10yr/5/4), medium grained sand, wet to moist, 35% sand | 65% fines .	W-M		sand pack; 50mm PVC Slotted
	14 – 19	9 – 4				**GW110 Terminated at 14m (Target Depth Reached)**			

Borehole Record: GW111

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,233.11	**Date Drilled:** 29/08/2023
Location: Richmond NSW	Northing: 6,278,711.78	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 24.81(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	24	GX111/0.1-0.2	SM		Silty SAND (SM) : light gray (10r/7/1), loose, fine to medium grained, with medium sized gravel, trace low plasticity clay, moist, 15% gravel | 60% sand | 25% fines.	M		
	1		GX111/1.3-1.4						
		23							
	2		GX111/1.9-2.9	CL		Sandy CLAY (CL) : firm, low plasticity, weak red (10r/5/4), medium grained sand, moist, 30% sand | 70% fines .			
		22							
	3			CL		Sandy CLAY (CL) : soft, low plasticity, white (10yr/8/1), medium grained sand, moist, 40% sand | 60% fines .			Cement
		21							
	4			CL		Sandy CLAY (CL) : firm, low plasticity, weak red (10r/5/4), medium grained sand, moist, 30% sand | 70% fines .			
		20							50mm PVC Solid
	5								
		19							
	6			CI		CLAY (CI) : soft, medium plasticity, yellowish brown (10yr/5/4), trace fine grained sand, moist, 10% sand | 90% fines .			
		18							
	7								
		17							
	8								
		16							
	9								
		15		CI		As above, but stiff.			

Borehole Record: GW111

Project: Richmond - Privileged and Confidential	**Position:** Easting: 289,233.11	**Date Drilled:** 29/08/2023
Location: Richmond NSW	Northing: 6,278,711.78	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 24.81(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	11	14		CI		CLAY (CI) : soft, medium plasticity, yellowish brown (10yr/5/4), trace fine grained sand, moist, 10% sand | 90% fines .			Cement
	12	13							50mm PVC Solid
									Bentonite
	13	12							
▼		11							sand pack
▽	14			CL		Sandy CLAY (CL) : soft, low plasticity, yellowish brown (10yr/5/4), medium grained sand, wet to moist, 40% sand | 60% fines .	W-M		50mm PVC Slotted
	15	10							
	16	9				**GW111 Terminated at 15.5m (Target Depth Reached)**			
	17	8							
	18	7							
	19	6							
		5							

Borehole Record: GW112

Project: Richmond - Privileged and Confidential	**Position:** Easting: 288,965.16	**Date Drilled:** 30/08/2023
Location: Richmond NSW	Northing: 6,279,041.83	**Drill Rig** Canter Truck
Loc Comment: Perched aquifer	**Elevation:** 25.58(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	25	GX112/0.1-0.2	SM		Silty SAND (SM) : brown (10yr/5/3), loose, fine to medium grained, trace low plasticity clay, moist, 85% sand | 15% fines .	M		Cement
	1								50mm PVC Solid
		24	GX112/1.7-1.8	SP		SAND (SP) : yellowish brown (10yr/5/4), loose, medium grained, trace low plasticity clay, moist, 80% sand | 20% fines .			Bentonite
	2								
		23		SC		Clayey SAND (SC) : yellowish brown (10yr/5/4), loose, medium grained, moist, 70% sand | 30% fines .			
▼	3								sand pack
▽		22		CL		Sandy CLAY (CL) : soft, low plasticity, yellowish brown (10yr/5/4), medium grained sand, wet to moist, 30% sand | 70% fines .	W-M		50mm PVC Slotted
	4								
		21							
	5			CI		CLAY (CI) : very stiff, medium plasticity, yellowish brown (10yr/5/4), trace fine grained sand, moist to dry, 5% sand | 95% fines .	M-D		Collapse
						GW112 Terminated at 5.1m (Target Depth Reached)			
	6	20							
		19							
	7								
		18							
	8								
		17							
	9								
		16							

Borehole Record: GW113

Project: Richmond - Privileged and Confidential	**Position:** Easting: 288,962.56	**Date Drilled:** 30/08/2023
Location: Richmond NSW	Northing: 6,279,319.19	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.53(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	21	GX113/0.4-0.5	SC		Clayey SAND (SC) : brown (10yr/5/3), loose, fine to medium grained, with medium sized gravel, moist, 5% gravel | 75% sand | 20% fines.	M		
	1	20	GX113/0.9-1.0	SC		Clayey SAND (SC) : yellowish brown (10yr/5/4), medium dense, medium grained, moist, 75% sand | 25% fines .			
	2	19	GX113/1.9-2.0	CI		Sandy CLAY (CI) : firm, medium plasticity, dark brown (10yr/3/3), fine grained sand, moist, 25% sand | 75% fines .			
	3	18		CL		Sandy CLAY (CL) : firm, low plasticity, yellowish brown (10yr/5/4), medium grained sand, moist, 35% sand | 65% fines .			Cement
	4	17		CI		CLAY (CI) : stiff, medium plasticity, yellowish brown (10yr/5/4), trace fine grained sand, moist, 5% sand | 95% fines .			
	5	16		CI		As above, but hard.			50mm PVC Solid
	6	15		CI		As above, but stiff.			
	7	14		CI		As above, but soft.			
	8	13							
	9	12							Bentonite

Borehole Record: GW113

Project: Richmond - Privileged and Confidential	**Position:** Easting: 288,962.56	**Date Drilled:** 30/08/2023
Location: Richmond NSW	Northing: 6,279,319.19	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.53(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
▼	11	11		Cl		As above, but soft.			Bentonite; 50mm PVC Solid
▽	12	10				As above, but wet.			sand pack
	13	9		Cl			W		50mm PVC Slotted
	14	8				**GW113 Terminated at 14m (Target Depth Reached)**			
	15	7							
	16	6							
	17	5							
	18	4							
	19	3							
		2							

Borehole Record: GW114

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,229.23	**Date Drilled:** 31/08/2023
Location: Richmond NSW	Northing: 6,278,313.56	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.81(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	22	GX114/0.1-0.2	SM		Silty SAND (SM) : dark brown (10yr/3/3), loose, fine to medium grained, trace low plasticity clay, moist, 85% sand | 15% fines .	M		
				SM		Silty SAND (SM) : light brownish gray (10yr/6/2), loose, fine to medium grained, trace low plasticity clay, moist, 85% sand | 15% fines .			
	1	21	GX114/1.0-1.1	CL		Sandy CLAY (CL) : firm, low plasticity, yellowish brown (10yr/5/4), medium grained sand, moist, 35% sand | 65% fines .			
	2	20		CL		Sandy CLAY (CL) : stiff, low plasticity, white (10yr/8/1), medium grained sand, moist, 20% sand | 80% fines .			Cement
	3	19		CL		Sandy CLAY (CL) : soft, low plasticity, brownish yellow (10yr/6/8), medium grained sand, moist, 20% sand | 80% fines .			
	4	18		CI		CLAY (CI) : stiff, medium plasticity, yellowish brown (10yr/5/4), trace fine grained sand, moist, 10% sand | 90% fines .			50mm PVC Solid
	5	17		CI		As above, but soft.			
	6	16		CI		As above, but stiff to very stiff.			
	7	15		CI		As above, but soft.			
	8	14		CI		As above, but stiff to very stiff.			
	9	13							

Borehole Record: GW114

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,229.23	**Date Drilled:** 31/08/2023
Location: Richmond NSW	Northing: 6,278,313.56	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.81(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	11	12				As above, but stiff to very stiff.			Cement
	12	11		Cl					Bentonite
▼	13	10							50mm PVC Solid
▽	14	9				As above, but soft, wet to moist.			sand pack
		8		Cl			W-M		50mm PVC Slotted
	15					**GW114 Terminated at 15m (Target Depth Reached)**			
	16	7							
	17	6							
	18	5							
	19	4							
		3							

Borehole Record: GW115

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,083.93	**Date Drilled:** 31/08/2023
Location: Richmond NSW	Northing: 6,278,643.08	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.68(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	23	GX115/0.0-0.1	SM		Silty SAND (SM) : pale brown (10yr/6/3), loose, fine to medium grained, trace low plasticity clay, moist, 85% sand | 15% fines .	M		
	1		GX115/0.9-1.0	SM		As above, but very pale brown (10yr/7/3).			
	2	22	GX115/1.6-1.7	SC		Clayey SAND (SC) : dark yellowish brown (10yr/4/4), medium dense, medium grained, moist, 65% sand | 35% fines .			
	3	21		CL		Sandy CLAY (CL) : firm, low plasticity, white (10yr/8/1), medium grained sand, moist, 40% sand | 60% fines .			Cement
	4	20		CI		CLAY (CI) : firm, medium plasticity, yellowish brown (10yr/5/4), trace fine grained sand, moist, 10% sand | 90% fines .			
				CH		CLAY (CH) : stiff, high plasticity, white (10r/8/1), trace fine grained sand, moist, 5% sand | 95% fines .		Red mottle	
	5	19		CH		CLAY (CH) : very stiff, high plasticity, dark yellowish brown (10yr/4/4), with fine grained sand, trace fine grained sand, moist, 12% sand | 88% fines .			50mm PVC Solid
	6	18		CH		As above, but soft.			
	7	17		CH		As above, but very stiff.			
	8	16							Bentonite
	9	15							sand pack
		14							50mm PVC Slotted

Borehole Record: GW115

Project: Richmond - Privileged and Confidential	**Position:** Easting: 290,083.93	**Date Drilled:** 31/08/2023
Location: Richmond NSW	Northing: 6,278,643.08	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.68(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034a	**Inclination:**	**Logged/Checked:** Sarah Bolton/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▽ ▼	11 12	13 12		CH		As above, but very stiff.			sand pack; 50mm PVC Slotted
				CL		Sandy CLAY (CL) : soft, low plasticity, yellowish brown (10yr/5/4), medium grained sand, wet to moist, 35% sand | 65% fines .	W-M		
	13 14 15 16 17 18 19	11 10 9 8 7 6 5 4				**GW115 Terminated at 12.5m (Target Depth Reached)**			

Borehole Record: GW116

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,234.64	**Date Drilled:** 19/10/2023
Location: Richmond NSW	Northing: 6,277,406.04	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.48(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
		21	GX116/0.4-0.5	ML		Clayey SILT (ML) : very soft, low plasticity, pale red (10r/6/2), trace fine sand, inorganic, dry, 2% sand | 98% fines .	D		
	1		GX116/0.9-1.0	CL		Sandy CLAY (CL) : soft, low plasticity, brownish yellow (10yr/6/6), medium sand, moist, 45% sand | 55% fines .	M		
		20							
	2			CL		Sandy CLAY (CL) : soft, low plasticity, brownish yellow (10yr/6/6), medium sand, moist, 40% sand | 60% fines .		Increasing moisture and clay content with depth	
		19							
	3			CI		CLAY (CI) : soft, medium plasticity, pinkish white (10r/8/2), moist, 100% fines .		From 3.0 m, very soft	Cement
		18							
	4			CL		CLAY (CI) : stiff, medium plasticity, brownish yellow (10yr/6/6), trace fine sand, moist, 2% sand | 98% fines .			
		17							
	5							Becoming softer	50mm PVC Solid
		16		CL		Sandy CLAY (CL) : stiff, low plasticity, brownish yellow (10yr/6/6), medium sand, trace fine sand, moist, 30% sand | 70% fines .			
	6								
		15							
	7			CL		Sandy CLAY (CL) : firm, low plasticity, brownish yellow (10yr/6/6), medium sand, moist, 15% fine sand | 85% fines .			
		14							
	8								
		13							
	9			CH		CLAY (CH) : firm, high plasticity, brownish yellow (10yr/6/6), moist, 100% fines .			
		12							

Borehole Record: GW116

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,234.64	**Date Drilled:** 19/10/2023
Location: Richmond NSW	Northing: 6,277,406.04	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.48(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	11		CH		CLAY (CH) : firm, high plasticity, brownish yellow (10yr/6/6), moist, 100% fines .			Cement
	12	10							50mm PVC Solid
	13	9							Bentonite
	14	8							sand pack
▽	15	7		CH		CLAY (CH) : firm, high plasticity, brownish yellow (10yr/6/6), trace fine sized gravel, trace fine grained sand, moist, 2% gravel | 2% sand | 96% fines.		From 14.2 m, wet	50mm PVC Slotted
	16	6							
	17	5				**GW116 Terminated at 16m (Target Depth Reached)**			
	18	4							
	19	3							
		2							

Borehole Record: GW117

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,895.44	**Date Drilled:** 19/10/2023
Location: Richmond NSW	Northing: 6,277,192.06	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.57(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	21	GX117/0.3-0.4,	ML		Clayey SILT (ML) : very soft, low plasticity, pale red (10r/6/2), trace fine sand, inorganic, dry, 2% sand | 98% fines .	D		
	1	20	GX117/0.9-1.0	CI		CLAY (CI) : firm, medium plasticity, red (10r/4/6), with fine sand, moist, 5% sand | 95% fines.	M		Cement
	4	17		CI		Sandy CLAY (CI) : firm, medium plasticity, red (10r/4/6), fine to medium grained sand, moist, 15% sand | 85% fines .			50mm PVC Solid
	6	15		SC		Clayey SAND (SC) : red (10r/4/6), medium dense, coarse grained, moist, 65% sand | 35% fines .			
	8	13		SC		SAND with clay and gravel (SC) : light red (10r/6/6), medium dense, coarse grained, medium sized gravel, moist, 15% gravel | 80% sand | 5% fines.		Gravels is 2-5 mm rounded grey sandstone and quartz	
	9	12		SC		SAND with clay (SC) : light red (10r/6/6), medium dense, moist, 90% coarse sand | 10% fines.			

Borehole Record: GW117

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,895.44	**Date Drilled:** 19/10/2023
Location: Richmond NSW	Northing: 6,277,192.06	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.57(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	11		SC		SAND with clay (SC) : light red (10r/6/6), medium dense, moist, 90% coarse sand | 10% fines.			Bentonite
	12	10							50mm PVC Solid
▼		9		CI		Sandy CLAY (CI) : soft, medium plasticity, red (10r/4/6), fine - med, moist, 15% sand | 85% fines .			sand pack
▽	13	8							50mm PVC Slotted
	14	7		CH		CLAY (CH) : soft, high plasticity, light red (10r/6/6), trace fine grained sand, moist, 98% fines .		At 15.0 m, Hard. At 15.5 m, Soft	Collapse
	15	6							
	16					**GW117 Terminated at 16m (Target Depth Reached)**			
	17	5							
	18	4							
	19	3							
		2							

Borehole Record: GW118

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,969.95	**Date Drilled:** 20/10/2023
Location: Richmond NSW	Northing: 6,277,438.86	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20.31(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	20	GX118/0.3-0.4	ML		Clayey SILT (ML) : very soft, low plasticity, pale red (10r/6/2), inorganic, dry, 2% fine sand | 98% fines .	D	Red clay aggregates	
	1	19	GX118/1.0-1.1 | DS2b | TS2b	CH		CLAY (CH) : soft, high plasticity, red (10r/4/6), with fine sand, moist, 98% fines.	M		
	2	18							
	3	17		CH		CLAY (CH) : firm, high plasticity, dusky red (10r/3/4), with trace fine sand, moist, 98% fines .			Cement
	4	16		CH		CLAY (CH) : stiff, high plasticity, light red (10r/6/6), with trace fine sand, moist, 98% fines .		Mottled white and grey	
	5	15		CH		CLAY (CH) : soft to firm, high plasticity, light red (10r/6/6), with trace fine sand, moist, 98% fines .			50mm PVC Solid
	6	14							
	7	13		CH		CLAY (CH) : stiff, high plasticity, light red (10r/6/6), with trace fine sand, moist, 98% fines .			
	8	12		CH		CLAY (CH) : stiff, high plasticity, light red (10r/6/6), with trace fine sand, moist, 2% sand | 98% fines .			
	9	11							Bentonite

Borehole Record: GW118

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,969.95	**Date Drilled:** 20/10/2023
Location: Richmond NSW	Northing: 6,277,438.86	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20.31(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	10	10							Bentonite
	11	9		CH		CLAY (CH) : stiff, high plasticity, light red (10r/6/6), with trace fine sand, moist, 2% sand | 98% fines .			50mm PVC Solid
▼	12	8							sand pack
	13	7							50mm PVC Slotted
▽	14	6		CH		CLAY (CH) : soft, high plasticity, light red (10r/6/6), with trace fine sand, moist, 98% fines .			
	15	5							Collapse
	16	4				**GW118 Terminated at 16m (Target Depth Reached)**			
	17	3							
	18	2							
	19	1							

Borehole Record: GW119

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,793.60	**Date Drilled:** 20/10/2023
Location: Richmond NSW	Northing: 6,277,775.74	**Drill Rig** Canter Truck
Loc Comment: Perched aquifer	**Elevation:** 17.70(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	17.7		ML		Clayey SILT (ML) : very soft, low plasticity, pale red (10r/6/2), trace fine sand, dry, 98% fines .	D	Red clay aggregates	Cement
			GX119/0.4-0.5						
	1	17		CH		CLAY (CH) : very stiff, high plasticity, red (10r/4/6), with trace fine sand, moist, 98% fines .	M		Bentonite 50mm PVC Solid
			GX119/1.3-1.4						
	2	16							
			GX119/2.0-2.1			Clayey SAND (SC) : red (10r/4/6), medium dense, moist, 70% medium sand | 30% fines .			
▽	3	15		SC					sand pack
▼									
	4	14							50mm PVC Slotted
	5	13							
		12							
	6					**GW119 Terminated at 6m (Target Depth Reached)**			Collapse
	7	11							
		10							
	8								
		9							
	9								
		8							

Borehole Record: GW120

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,677.32	**Date Drilled:** 23/10/2023
Location: Richmond NSW	Northing: 6,277,422.97	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.87(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	21	GX120/0.4-0.5	SM		SILT with sand (ML) : pale red (10r/6/2), loose to medium dense, with low plasticity clay, trace fine gravel, dry, 20% fine sand | 80% fines .	D		
	1								
		20	GX120/1.4-1.5	CI		CLAY with sand (CI) : soft, medium plasticity, light grey (10r/7/1) mottled with yellow, dry, 15% fine sand | 85% fines .			
	2								
		19		CL-CI		Sandy CLAY (CL-CI) : soft, low to medium plasticity, light red (10r/6/6), fine to medium grained sand, moist, 15% sand | 85% fines .	M		Cement
	3								
		18		CI		Silty CLAY (CL) : soft, medium plasticity, brownish yellow (10yr/6/6), moist, 5% fine sand | 95% fines .			
	4								
		17							50mm PVC Solid
	5								
		16							
	6								
		15							
	7								
		14							
	8								Bentonite
		13							
	9								sand pack
		12							

Borehole Record: GW120

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,677.32	**Date Drilled:** 23/10/2023
Location: Richmond NSW	Northing: 6,277,422.97	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.87(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	11		CI		Silty CLAY (CL) : soft, medium plasticity, brownish yellow (10yr/6/6), moist, 5% fine sand | 95% fines .		softer but dry	50mm PVC Solid
	12	10							sand pack
	13	9							
	14	8							50mm PVC Slotted
	15	7							
	16	6							Collapse
	17	5				**GW120 Terminated at 16m**			
	18	4							
	19	3							
		2							

Borehole Record: GW121

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,445.84	**Date Drilled:** 23/10/2023
Location: Richmond NSW	Northing: 6,277,173.62	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20.63(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	20	GW121/0.4-0.5	SM		Silty SAND (SM) : reddish gray (5yr/5/2), loose, with low plasticity clay, dry, 40% fine sand | 60% fines .	D		
	1			SP		Gravelly SAND (SP) : brownish yellow (10yr/6/6), medium dense, with low plasticity clay, dry, 80% medium sand | 17% fine gravel | 2% fines.			
		19	GW121/1.4-1.5						
	2								
		18		CL		Sandy CLAY (CL) : soft, medium plasticity, very pale brown (10yr/7/4), dry, 15% fine sand | 85% fines .			Cement
	3								
		17							
	4								
		16							50mm PVC Solid
	5								
		15							
	6								
		14							
	7								
		13		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), very loose, dry, 95% fine - med sand | 5% fines .		softer	
	8								
		12		CL		Sandy CLAY (CL) : soft, medium plasticity, brownish yellow (10yr/6/6), moist to dry, 10% fine sand | 90% fines .	M-D		Bentonite
	9								
		11							

Borehole Record: GW121

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,445.84	**Date Drilled:** 23/10/2023
Location: Richmond NSW	Northing: 6,277,173.62	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20.63(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	10		CL		Sandy CLAY (CL) : soft, medium plasticity, brownish yellow (10yr/6/6), moist to dry, 10% fine sand | 90% fines .	M-D	softer	50mm PVC Solid
									sand pack
▽	12	9						moist	
	13	8		CL		CLAY with sand (CL) : soft, low plasticity, red (10r/4/6), wet, 20% fine sand | 80% fines .	W		50mm PVC Slotted
		7							
	14					**GW121 Terminated at 14m**			Collapse
	15	6							
	16	5							
	17	4							
	18	3							
	19	2							
		1							

Borehole Record: GW122

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,372.81	**Date Drilled:** 24/10/2023
Location: Richmond NSW	Northing: 6,277,610.66	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.38(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	21		SM		Silty SAND (SM) : reddish gray (5yr/5/2), medium dense, trace medium gravel, dry, 40% fine sand | 60% fines .	D		
			GX122/0.4-0.5					semi rounded coarse gravels	
	1			CL		Sandy CLAY (CL) : firm, low plasticity, light red (10r/6/6), dry, 25% fine sand | 75% fines .			
		20	GX122/1.4-1.5						
	2								
		19				CLAY (CI) : firm to stiff, medium plasticity, brownish yellow (10yr/6/6), moist, 5% fine sand | 90% fines .		softer	Cement
	3		GX122/2.9-3.0						
		18						softer	
	4								
		17							
	5								50mm PVC Solid
		16							
	6			CI			M		
		15							
	7								
		14							
	8								Bentonite
		13							
	9								sand pack
		12							

Borehole Record: GW122

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,372.81	**Date Drilled:** 24/10/2023
Location: Richmond NSW	Northing: 6,277,610.66	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.38(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	11		CI		CLAY (CI) : firm to stiff, medium plasticity, brownish yellow (10yr/6/6), moist, 5% fine sand | 90% fines .	M		50mm PVC Solid
	11	10							sand pack
▽								softer	
▼	12	9		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), loose, fine grained, wet, 70% sand | 30% fines .	W		50mm PVC Slotted
	13	8							Collapse
	14	7				**GW122 Terminated at 13.5m**			
	15	6							
	16	5							
	17	4							
	18	3							
	19	2							

Borehole Record: GW123

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,235.45	**Date Drilled:** 24/10/2023
Location: Richmond NSW	Northing: 6,277,828.82	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.18(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	22		SM		Silty SAND (SM) : reddish gray (5yr/5/2), medium dense, fine grained, with coarse sized gravel, trace low plasticity clay, dry, 10% gravel | 60% sand | 40% fines.	D		
			GX123/0.4-0.5 DS4b TS4b						
	1	21		CL		Sandy CLAY (CL) : soft, low plasticity, reddish yellow (5yr/6/6), fine grained sand, dry, 30% sand | 70% fines .			
			GX123/1.4-1.5						
	2	20							
				CL		Sandy CLAY (CL) : soft, low plasticity, yellowish brown (10yr/5/4), medium grained sand, moist, 40% sand | 60% fines .	M		
	3	19	GX123/2.9-3.0						Cement
				CI		Sandy CLAY (CI) : soft, medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, moist, 10% sand | 90% fines .			
	4	18							
	5	17							50mm PVC Solid
	6	16							
	7	15							
	8	14							
	9	13							Bentonite

Borehole Record: GW123

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,235.45	**Date Drilled:** 24/10/2023
Location: Richmond NSW	Northing: 6,277,828.82	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.18(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	11	11		Cl		Sandy CLAY (Cl) : soft, medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, moist, 10% sand | 90% fines .			Bentonite; 50mm PVC Solid
▽	12	10		SC		Clayey SAND (SC) : reddish brown (5yr/5/4), medium dense, fine grained, wet, 65% sand | 35% fines .	W		sand pack; 50mm PVC Slotted
▼	13	9							
	14	8							
	15	7				**GW123 Terminated at 15m**			Collapse
	16	6							
	17	5							
	18	4							
	19	3							

Borehole Record: GW124

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 292,474.05	**Date Drilled:** 25/10/2023
Location: Richmond NSW	Northing: 6,278,252.96	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 17.53(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	17		SM		Silty SAND (SM) : reddish gray (5yr/5/2), medium dense, fine grained, with coarse sized gravel, trace low plasticity clay, dry, 10% gravel | 60% sand | 40% fines.	D		
			GX124/0.4-0.5	CI		Sandy CLAY (CI) : stiff, medium plasticity, light reddish brown (5yr/6/4), fine grained sand, trace medium sized gravel, dry, 5% gravel | 5% sand | 95% fines.			
	1	16	GX124/1.4-1.5	CI		Sandy CLAY (CI) : soft, medium plasticity, reddish brown (5yr/4/4), fine grained sand, dry, 10% sand | 90% fines .		softer and increase in moisture	Cement
	2	15							
	3	14							50mm PVC Solid
	4	13							
	5	12		SC		Clayey SAND (SC) : reddish brown (5yr/5/4), medium dense, fine grained, moist to dry, 65% sand | 35% fines .	M-D		Bentonite
▽	6	11		SC		Clayey SAND (SC) : reddish brown (5yr/5/4), medium dense, fine grained, wet, 75% sand | 25% fines .	W	softer	sand pack
▼	7	10							
	8	9							50mm PVC Slotted
	9	8				**GW124 Terminated at 9.5m**			

Borehole Record: GW125

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 292,320.68
Northing: 6,278,661.83
Elevation: 16.71(m)
Inclination:

Date Drilled: 25/10/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
				SM		Silty SAND (SM) : reddish gray (5yr/5/2), medium dense, fine grained, with coarse sized gravel, trace low plasticity clay, dry, 10% gravel | 60% sand | 40% fines.	D		
			GX125/0.5-0.6	CI		Sandy CLAY (CI) : stiff, medium plasticity, light reddish brown (5yr/6/4), fine grained sand, trace medium sized gravel, dry, 5% gravel | 5% sand | 95% fines.			
	1	16		CL		Sandy CLAY (CL) : soft, low plasticity, reddish brown (5yr/4/4), fine grained sand, dry, 15% sand | 85% fines .			Cement
			GX125/1.4-1.5						
	2	15						softer	
				SC		Clayey SAND (SC) : reddish brown (5yr/5/4), loose, fine grained, moist to dry, 75% sand | 25% fines .	M-D		
	3	14	GX125/2.9-3.0	CL		Sandy CLAY (CL) : soft, low plasticity, pinkish gray (5yr/7/2), fine grained sand, moist to dry, 20% sand | 80% fines .			50mm PVC Solid
	4	13		SC		Clayey SAND (SC) : red (10r/4/6), loose, fine grained, moist to dry, 75% sand | 25% fines .			Bentonite
	5	12						soft	
	6	11							sand pack
▼	7	10							50mm PVC Slotted
▽	8	9		CI		Sandy CLAY (CI) : soft, medium plasticity, reddish brown (5yr/4/4), fine grained sand, wet, 15% sand | 85% fines .	W		
	9	8				**GW125 Terminated at 8.5m**			
		7							

Borehole Record: GW126

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,765.89
Northing: 6,278,483.62
Elevation: 23.72(m)
Inclination:

Date Drilled: 30/10/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	23.72		SM		Silty SAND (SM) : dark reddish brown (5yr/3/4), medium dense, fine to medium grained, with coarse sized gravel, moist, 5% gravel | 75% sand | 20% fines.	M		
			GX126/0.4-0.5	SC		Clayey SAND (SC) : light reddish brown (5yr/6/4), loose, fine to medium grained, moist, 80% sand | 20% fines .			
	1	22.72		CL-CI		Sandy CLAY (CL-CI) : soft, low to medium plasticity, light reddish brown (5yr/6/4), medium grained sand, moist, 35% sand | 65% fines .			
			GX126/1.4-1.5						
	2	21.72						sand grain size increase, more coarse	
			GX126/2.9-3.0						
	3	20.72							Cement
	4	19.72		CL		Sandy CLAY (CL) : soft, low plasticity, pinkish white (10r/8/2), fine to medium grained sand, dry, 15% sand | 85% fines .	D		
	5	18.72		CI		Sandy CLAY (CI) : firm, medium plasticity, light reddish brown (5yr/6/4), medium grained sand, dry, 15% sand | 85% fines .			50mm PVC Solid
	6	17.72							
	7	16.72							
	8	15.72							
	9	14.72							

Borehole Record: GW126

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,765.89
Northing: 6,278,483.62
Elevation: 23.72(m)
Inclination:

Date Drilled: 30/10/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11–18	13–6		CI		Sandy CLAY (CI) : firm, medium plasticity, light reddish brown (5yr/6/4), medium grained sand, dry, 15% sand | 85% fines .		softer moister	Cement 50mm PVC Solid Bentonite sand pack 50mm PVC Slotted Collapse
	18–19	6–5				**GW126 Terminated at 18m**			

Borehole Record: GW127

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,678.46
Northing: 6,278,536.51
Elevation: 23.64(m)
Inclination:

Date Drilled: 31/10/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	23	GX127/0.5-0.6	SC		Clayey to silty SAND (SC) : pale red (10r/7/4), loose, fine to medium grained, trace coarse sized gravel, dry, 80% sand | 20% fines .	D		Cement
	1	22	GX127/1.4-1.5	SC		Clayey SAND (SC) : reddish brown (5yr/4/4), loose, medium grained, trace coarse sized gravel, dry, 80% sand | 20% fines .			
	2	21		SC		Clayey SAND (SC) : light red (10r/6/6), medium dense, medium to coarse grained, with coarse sized gravel, moist to dry, 5% gravel | 75% sand | 20% fines.	M-D		
	3	20	GX127/2.9-3.0	SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), medium dense, medium grained, moist, 65% sand | 35% fines .	M		
	4	19		CL		Sandy CLAY (CL) : soft to firm, low plasticity, very pale brown (10yr/8/2), medium grained sand, moist to dry, 40% sand | 60% fines .	M-D		
	5	18		CI-CH		Silty CLAY (CI-CH) : firm, medium to high plasticity, pinkish white (10r/8/2), with fine grained sand, dry, 5% sand | 95% fines .	D		50mm PVC Solid
	6	17		CI		Sandy CLAY (CI) : soft, medium plasticity, reddish brown (5yr/4/4), fine grained sand, dry, 15% sand | 85% fines .		sand content increases	
	7	16							
	8	15							
	9	14		SC		Clayey SAND (SC) : light red (10r/6/6), loose, fine grained, dry, 75% sand | 25% fines .			
				CI		Sandy CLAY (CI) : soft, medium plasticity, brownish yellow (10yr/6/6), fine grained sand, dry, 15% sand | 85% fines .			

Borehole Record: GW127

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,678.46
Northing: 6,278,536.51
Elevation: 23.64(m)
Inclination:

Date Drilled: 31/10/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	0–18	13–5		CI		Sandy CLAY (CI) : soft, medium plasticity, brownish yellow (10yr/6/6), fine grained sand, dry, 15% sand | 85% fines .	moisture		Cement; 50mm PVC Solid; Bentonite; sand pack; 50mm PVC Slotted; Collapse
	18	5				**GW127 Terminated at 18m**			

Borehole Record: GW128

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,181.30
Northing: 6,278,042.58
Elevation: 22.8(m)
Inclination:

Date Drilled: 31/10/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22.8		F		Fill Sandy GRAVEL pale red (10r/6/2), coarse sized, medium grained sand, moist to dry, 80% gravel | 20% sand roadbase.	M-D		
				SM		Silty SAND (SM) : reddish gray (5yr/5/2), medium dense, fine grained, with low plasticity clay, moist to dry, 80% sand | 20% fines .			
			GX128/0.4-0.5						
	1	22		SC		Clayey SAND (SC) : pale red (10r/7/4), loose, fine to medium grained, moist to dry, 85% sand | 15% fines .			
			GX128/1.4-1.5	CL-CI		Sandy CLAY (CL-CI) : soft, low to medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, moist to dry, 30% sand | 70% fines .			Cement
	2	21							
	3	20	GX128/2.9-3.0					slight moisture	
	4	19							
	5	18		CI		Silty CLAY (CI) : soft, medium plasticity, reddish brown (5yr/4/4), with fine grained sand, moist to dry, 15% sand | 85% fines .			50mm PVC Solid
	6	17							
	7	16							
	8	15							
	9	14							
		13							Bentonite

Borehole Record: GW128

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,181.30
Northing: 6,278,042.58
Elevation: 22.8(m)
Inclination:

Date Drilled: 31/10/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼ ▽	11 12 13 14 15 16 17 18 19	12.8 12 11 10 9 8 7 6 5 4 3		CI		Silty CLAY (CI) : soft, medium plasticity, reddish brown (5yr/4/4), with fine grained sand, moist to dry, 15% sand | 85% fines .		softer	Bentonite; 50mm PVC Solid; sand pack; 50mm PVC Slotted; Collapse
						GW128 Terminated at 15m			

Borehole Record: GW129

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,026.54
Northing: 6,277,894.41
Elevation: 22.74(m)
Inclination:

Date Drilled: 01/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22	GX129/0.4-0.5	SM		Silty SAND (SM) : reddish gray (5yr/5/2), loose, fine grained, with low plasticity clay, dry, 75% sand | 25% fines .	D		
	1			SC		Clayey SAND (SC) : yellow (10yr/8/6), medium dense, fine to medium grained, dry, 70% sand | 30% fines .			
	2	21	GX129/1.4-1.5	CL		Sandy CLAY (CL) : soft, low plasticity, yellow (10yr/8/6), fine to medium grained sand, moist to dry, 40% sand | 60% fines .	M-D		
	3	20	GX129/2.9-3.0					colour change 10R8/2	Cement
		19		CI		Sandy CLAY (CI) : soft, medium plasticity, yellow (10yr/8/6), fine to medium grained sand, moist to dry, 15% sand | 85% fines .			
	4	18		CI-CH		Silty CLAY (CI-CH) : soft to firm, medium to high plasticity, brownish yellow (10yr/6/6), trace fine grained sand, dry, 10% sand | 90% fines .	D		50mm PVC Solid
	5	17							
	6	16							
	7	15							
	8	14							
	9	13							Bentonite

Borehole Record: GW129

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,026.54
Northing: 6,277,894.41
Elevation: 22.74(m)
Inclination:

Date Drilled: 01/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▽	11	12		CI-CH		Silty CLAY (CI-CH) : soft to firm, medium to high plasticity, brownish yellow (10yr/6/6), trace fine grained sand, dry, 10% sand | 90% fines .	D		50mm PVC Solid
	12	11							sand pack
▼	13	10		CI-CH		As above, but soft, moist, 15% sand | 85% fines .	M	softer	50mm PVC Slotted
	14	9		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), loose, fine grained, wet, 70% sand | 30% fines .	W		Collapse
	15	8							
	16	7				**GW129 Terminated at 15m**			
	17	6							
	18	5							
	19	4							
		3							

Borehole Record: GW130

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment: Perched aquifer
Job No: 2301034b

Position: Easting: 291,385.78
Northing: 6,278,139.87
Elevation: 22.71(m)
Inclination:

Date Drilled: 01/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22		F		Fill Clayey SAND reddish gray (5yr/5/2), medium grained, dry, 85% sand | 15% fines .	D		Cement
	1		GX130/0.4-0.5	SC		Clayey SAND (SC) : pale red (10r/7/4), loose, fine to medium grained, moist to dry, 85% sand | 15% fines .	M-D		
	2	21	GX130/1.4-1.5						50mm PVC Solid
									Bentonite
▼	3	20		CL		Sandy CLAY (CL) : soft, low plasticity, yellow (10yr/8/6), medium grained sand, moist, 40% sand | 60% fines .	M	colour change 10R8/2	
	4	19	GX130/2.9-3.0						sand pack
▽									
	5	18							50mm PVC Slotted
	6	17				**GW130 Terminated at 6m (Target Depth Reached)**			
	7	16							
	8	15							
	9	14							
		13							

Borehole Record: GW131

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment: Perched aquifer
Job No: 2301034b

Position: Easting: 291,658.31
Northing: 6,278,098.26
Elevation: 22.66(m)
Inclination:

Date Drilled: 01/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22	GX131/0.4-0.5	SM		Silty SAND (SM) : pale red (10r/7/4), loose, fine grained, dry, 70% sand | 30% fines .	D		Cement
▼	1			CL		Silty to sandy CLAY (CL) : soft, low plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, moist, 40% sand | 60% fines .	M		Bentonite 50mm PVC Solid
	2	21	GX131/1.4-1.5						
▽		20	GX131/2.5-2.6	SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), medium dense, fine to medium grained, wet, 80% sand | 20% fines .	W	sand lense with perched water	sand pack
	3			CL-CI		Sandy CLAY (CL-CI) : soft, low to medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, moist, 40% sand | 60% fines .	M		50mm PVC Slotted
		19		CI		Silty CLAY (CI) : soft to firm, medium plasticity, pinkish white (10r/8/2), with fine grained sand, dry, 15% sand | 85% fines .	D		
	4					**GW131 Terminated at 4m**			
	5	18							
	6	17							
	7	16							
	8	15							
	9	14							
		13							

Borehole Record: GW132

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,343.61	**Date Drilled:** 02/11/2023
Location: Richmond NSW	Northing: 6,278,333.78	**Drill Rig** Canter Truck
Loc Comment: Perched aquifer	**Elevation:** 23.21(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Elevation of ground surface assumed 0.1m above TOC

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	23		SP		Fill SAND reddish gray (5yr/5/2), medium grained, moist, 100% sand .	M		Cement
			GX132/0.4-0.5	SP		SAND (SP) : pinkish white (10r/8/2), loose, medium grained, trace low plasticity clay, moist, 100% sand .			
	1	22		SC		Clayey SAND (SC) : pale red (10r/7/4), medium dense, medium to coarse grained, with medium sized gravel, wet to moist, 10% gravel | 75% sand | 15% fines.	W-M	Subangular ironstone gravels, 3-15mm. Bands of Sandy clay throughout	Bentonite
			GX132/1.4-1.5	CL		Sandy CLAY (CL) : soft, low plasticity, light red (10r/6/6), medium grained sand, moist, 40% sand | 60% fines .	M		50mm PVC Solid
	2	21							
	3	20	GX132/2.9-3.0						sand pack
▽	4	19		CI		CLAY (CI) : firm, medium plasticity, pinkish white (10r/8/2), moist, 100% fines .			
	5	18		CI		CLAY (CI) : stiff to very stiff, medium plasticity, pale red (10r/7/4), moist, 100% fines .			50mm PVC Slotted
	6	17				**GW132 Terminated at 5.5m (Target Depth Reached)**			
	7	16							
	8	15							
	9	14							

Borehole Record: GW133

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,577.11
Northing: 6,278,609.27
Elevation: 24.05(m)
Inclination:

Date Drilled: 02/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	24.0		SM		Silty SAND (SM) : reddish gray (5yr/5/2), loose, fine grained, moist, 85% sand | 15% fines .	M		
			GX133/0.4-0.5	SP		SAND (SP) : pinkish white (10r/8/2), medium dense, medium grained, with fine to medium sized gravel, trace low plasticity clay, moist, 20% gravel | 80% sand .			
	1	23							
			GX133/1.4-1.5						
	2	22							
			GX133/2.9-3.0	CL		Sandy CLAY (CL) : soft, low plasticity, light red (10r/6/6), medium grained sand, moist, 40% sand | 60% fines .			Cement
	3	21							
				CI		CLAY (CI) : stiff, medium plasticity, light red (10r/6/6), trace fine grained sand, moist, 3% sand | 97% fines .		trace silt	
	4	20							
	5	19							50mm PVC Solid
	6	18							
	7	17							
	8	16							
	9	15		CI		CLAY (CI) : soft, medium plasticity, light red (10r/6/6), trace fine grained sand, moist, 100% fines .			Bentonite

Borehole Record: GW133

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,577.11
Northing: 6,278,609.27
Elevation: 24.05(m)
Inclination:

Date Drilled: 02/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼ ▽	11–15	14.0–9		CI		CLAY (CI) : soft, medium plasticity, light red (10r/6/6), trace fine grained sand, moist, 100% fines .			50mm PVC Solid; sand pack; 50mm PVC Slotted
	16–19	8–5				**GW133 Terminated at 15m (Target Depth Reached)**			

Borehole Record: GW134

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,537.47
Northing: 6,278,518.62
Elevation: 24.01(m)
Inclination:

Date Drilled: 03/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	24		SM		Silty SAND (SM) : reddish gray (5yr/5/2), loose, fine grained, moist, 85% sand | 15% fines .	M		
			GX134/0.4-0.5	SP		SAND (SP) : pinkish white (10r/8/2), medium dense, medium grained, with fine to medium sized gravel, trace low plasticity clay, moist, 20% gravel | 80% sand .			
	1	23							
			GX134/1.4-1.5						
	2	22							
			GX134/2.9-3.0	CL		Sandy CLAY (CL) : soft, low plasticity, light red (10r/6/6), medium grained sand, moist, 40% sand | 60% fines .			Cement
	3	21							
	4	20		CL		Sandy to gravelly CLAY (CL) : hard, low plasticity, light red (10r/6/6), medium sized gravel, medium grained sand, moist, 25% gravel | 15% sand | 60% fines.		Very hard, like weathered rock	
	5	19		CI		CLAY (CI) : soft, medium plasticity, light red (10r/6/6), trace fine grained sand, moist, 100% fines .			50mm PVC Solid
	6	18							
	7	17							
	8	16							
	9	15							

Borehole Record: GW134

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,537.47
Northing: 6,278,518.62
Elevation: 24.01(m)
Inclination:

Date Drilled: 03/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	13		CI		CLAY (CI) : soft, medium plasticity, light red (10r/6/6), trace fine grained sand, moist, 100% fines .			Bentonite; 50mm PVC Solid; sand pack; 50mm PVC Slotted
▽	13	11							
	14	10							
	15	9				**GW134 Terminated at 15m (Target Depth Reached)**			
	16	8							
	17	7							
	18	6							
	19	5							

Borehole Record: GW135

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,935.88	**Date Drilled:** 23/11/2023
Location: Richmond NSW	Northing: 6,278,136.30	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 18.90(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
		18.9		SM		Silty SAND (SM) : pinkish white (10r/8/2), loose, fine grained, with medium sized gravel, trace low plasticity clay, dry, 10% gravel | 65% sand | 25% fines.	D		
	1	18	GX135/0.4-0.5 / DS5 / TS5	CL-CI		Silty CLAY (CL-CI) : very stiff, low to medium plasticity, yellowish brown (10yr/5/4), with fine grained sand, moist to dry, 10% sand | 90% fines .	M-D	Moist from 0.5, dry and very stiff from 1m	
	2	17	GX135/1.4-1.5						
	3	16	GX135/2.9-3.0			Silty CLAY (CL-CI) : very stiff, low to medium plasticity, light yellowish brown (2.5y/6/4), with fine grained sand, moist to dry, 10% sand | 90% fines .			Cement
	4	15							
	5	14							50mm PVC Solid
	6	13		CL-CI					
	7	12							
	8	11							
▼	9	10							Bentonite
		9							

Borehole Record: GW135

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,935.88	**Date Drilled:** 23/11/2023
Location: Richmond NSW	Northing: 6,278,136.30	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 18.90(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	8.9		CL-CI		Silty CLAY (CL-CI) : very stiff, low to medium plasticity, light yellowish brown (2.5y/6/4), with fine grained sand, moist to dry, 10% sand | 90% fines .			Bentonite
	12	8							50mm PVC Solid
	13	7							sand pack
▽	14	6		CI-CH		Silty CLAY (CI-CH) : hard, medium to high plasticity, light red (10r/6/6), with fine grained sand, moist to dry, 100% fines.			50mm PVC Slotted
	15	5		CI-CH		Silty CLAY (CI-CH) : soft, medium to high plasticity, light red (10r/6/6), with fine grained sand, wet, 100% fines .	W		
	16	4				**GW135 Terminated at 15m (Target Depth Reached)**			
	17	3							
	18	2							
	19	1							
		0							
		-1							

Borehole Record: GW136

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,674.88	**Date Drilled:** 22/11/2023
Location: Richmond NSW	Northing: 6,277,940.50	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.42(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22	GX136/0.4-0.5 DS7b TS7b	SM		Silty SAND (SM) : pinkish white (10r/8/2), loose, fine grained, trace medium sized gravel, dry, 2% gravel | 75% sand | 23% fines.	D		
	1								
		21	GX136/1.3-1.4	CL-CI		Sandy CLAY (CL-CI) : soft, low to medium plasticity, yellowish brown (10yr/5/4), fine to medium grained sand, dry, 30% sand | 70% fines .			
	2	20						sand content and moisture slightly increase	
	3		GX136/2.9-3.0						Cement
		19							
	4			CI-CH		Silty CLAY (CI-CH) : firm, medium to high plasticity, dark olive gray (5y /3/2), trace fine grained sand, dry, 10% sand | 90% fines .			
		18							
	5								50mm PVC Solid
		17							
	6								
		16							
	7								
		15							
	8								
		14							
	9			CI-CH		Silty CLAY (CI-CH) : soft, medium to high plasticity, dark olive gray (5y /3/2), trace fine grained sand, dry, 10% sand | 90% fines .			Bentonite
		13							

Borehole Record: GW136

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,674.88	**Date Drilled:** 22/11/2023
Location: Richmond NSW	Northing: 6,277,940.50	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.42(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▽	11	12		CI-CH		Silty CLAY (CI-CH) : soft, medium to high plasticity, dark olive gray (5y /3/2), trace fine grained sand, dry, 10% sand | 90% fines .			50mm PVC Solid
	12	11		CI		Silty to sandy CLAY (CI) : soft, medium plasticity, red (10r/4/6), fine grained sand, trace fine grained sand, wet to moist, 20% sand | 80% fines .	W-M		sand pack
▼	13	10							50mm PVC Slotted
		9							
	14	8				**GW136 Terminated at 13.7m (Target Depth Reached)**			
	15	7							
	16	6							
	17	5							
	18	4							
	19	3							

Borehole Record: GW137

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,748.28	**Date Drilled:** 22/11/2023
Location: Richmond NSW	Northing: 6,277,807.73	**Drill Rig** Canter Truck
Loc Comment: Perched aquifer	**Elevation:** 21.71(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	21	GX137/0.4-0.5	SM		Silty SAND (SM) : pinkish white (10r/8/2), loose, fine grained, dry, 75% sand | 25% fines .	D		Cement
	1		GX137/1.0-1.1	Cl		Sandy CLAY (Cl) : soft, medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, dry, 30% sand | 70% fines .			50mm PVC Solid
▽		20		SC		Clayey SAND (SC) : very pale brown (10yr/8/2), medium dense, medium grained, moist, 35% sand | 65% fines .	M		Bentonite
	2							perched water in clayey sand lense	
▼		19		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), medium dense, medium grained, moist, 65% sand | 35% fines .			sand pack
	3		GX137/2.9-3.0						50mm PVC Slotted
		18		Cl		Sandy CLAY (Cl) : soft, medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, moist, 25% sand | 75% fines .		softer	
	4					**GW137 Terminated at 4m**			
		17							
	5								
		16							
	6								
		15							
	7								
		14							
	8								
		13							
	9								
		12							

Borehole Record: GW138

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,639.60	**Date Drilled:** 22/11/2023
Location: Richmond NSW	Northing: 6,277,531.89	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.18(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	21		SM		Silty SAND (SM) : very pale brown (10yr/8/2), loose, fine grained, dry, 70% sand | 30% fines .	D		
			GX138/0.4-0.5						
	1	20		CI		Sandy CLAY (CI) : firm, medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, dry, 20% sand | 80% fines .			
			GX138/1.4-1.5						
	2	19							Cement
				CI		Sandy CLAY (CI) : soft, medium plasticity, dark olive gray (5y /3/2), fine grained sand, with medium to coarse sized gravel, dry, 10% gravel | 15% sand | 75% fines, rounded gravels 1-5mm.		slightly damp	
	3	18	GX138/2.9-3.0						
				CI-CH		Silty CLAY (CI-CH) : soft, medium to high plasticity, brownish yellow (10yr/6/6), with fine grained sand, moist to dry, 10% sand | 90% fines .	M-D		50mm PVC Solid
	4	17							
	5	16							
	6	15						softer	
	7	14							Bentonite
	8	13							
									sand pack
	9	12		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), medium dense, medium grained, moist, 75% sand | 25% fines .	M		50mm PVC Slotted

Borehole Record: GW138

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,639.60	**Date Drilled:** 22/11/2023
Location: Richmond NSW	Northing: 6,277,531.89	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.18(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▽	11	11		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), medium dense, medium grained, moist, 75% sand | 25% fines .	M		sand pack
				SC		Clayey SAND (SC) : yellow (10yr/8/6), medium dense, fine grained, moist, 25% sand | 75% fines .			50mm PVC Slotted
▼	12	10							
		9				**GW138 Terminated at 12m**			
	13	8							
	14	7							
	15	6							
	16	5							
	17	4							
	18	3							
	19	2							

Borehole Record: GW139

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,669.96
Northing: 6,278,725.09
Elevation: 24.29(m)
Inclination:

Date Drilled: 24/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	24	GX139/0.4-0.5	SM		Silty SAND (SM) : dusky red (10r/3/4), medium dense, fine grained, trace low plasticity clay, dry, 85% sand | 15% fines .	D		
	1	23	GX139/1.4-1.5	SM		Silty SAND (SM) : red (10r/4/6), dense, fine grained, trace low plasticity clay, dry, 85% sand | 15% fines .			
	2	22		SC		Clayey SAND (SC) : red (10r/4/6), medium dense, fine grained, trace low plasticity clay, moist, 70% sand | 30% fines.	M	Increasing clay content with depth, small clay aggregates.	
	3	21	GX139/2.9-3.0	SC		Clayey SAND (SC) : red (10r/4/6), dense to very dense, fine grained, trace low plasticity clay, moist, 65% sand | 35% fines.			Cement
	4	20		CL		Sandy CLAY (CL) : stiff, low plasticity, red (10r/4/6), medium grained sand, moist, 40% sand | 60% fines.			
	5	19		CI		Sandy CLAY (CI) : firm, medium plasticity, red (10r/4/6), medium grained sand, moist, 20% sand | 80% fines.		Trace silt, decreasing sand content with depth.	50mm PVC Solid
	6	18		CH		CLAY (CH) : stiff, high plasticity, brownish yellow (10yr/6/6), trace fine grained sand, moist, 2% sand | 98% fines .		Trace silt	
	7	17							
	8	16							
	9	15							Bentonite

Borehole Record: GW139

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,669.96
Northing: 6,278,725.09
Elevation: 24.29(m)
Inclination:

Date Drilled: 24/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	14		CH		CLAY (CH) : soft, high plasticity, brownish yellow (10yr/6/6), trace fine grained sand, moist, 2% sand | 98% fines .		Trace silt	Bentonite
	12	13							50mm PVC Solid
	13	12							sand pack
▼	14	11							50mm PVC Slotted
▽		10		SC		Clayey SAND (SC) : red (10r/4/6), loose, medium to coarse grained, wet, 70% sand | 30% fines.	W	Trace silt, increasing moisture	
	15	9				**GW139 Terminated at 15m (Target Depth Reached)**			Collapse
	16	8							
	17	7							
	18	6							
	19	5							

Borehole Record: GW140

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,794.82
Northing: 6,278,867.54
Elevation: 24.01(m)
Inclination:

Date Drilled: 24/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	24		SM		Silty SAND (SM) : dusky red (10r/3/4), medium dense, fine grained, trace low plasticity clay, dry, 85% sand | 15% fines .	D		
			GX140/0.4-0.5						
	1	23		SM		Silty SAND (SM) : red (10r/4/6), dense, fine grained, trace low plasticity clay, dry, 85% sand | 15% fines .			
			GX140/1.4-1.5						
	2	22		SC		Clayey SAND (SC) : red (10r/4/6), very dense, fine grained, trace low plasticity clay, moist, 70% sand | 30% fines.	M		
			GX140/2.9-3.0						
	3	21		SC		Clayey SAND (SC) : red (10r/4/6), very dense, fine grained, with fine to medium sized gravel, trace low plasticity clay, moist, 65% sand | 30% fines | 5% gravels.		Ironstone gravels, 2-5mm, subangular to angular	Cement
	4	20		CL		Sandy CLAY (CL) : stiff, low plasticity, red (10r/4/6), medium grained sand, moist, 40% sand | 60% fines .			
	5	19		CI		Sandy CLAY (CI) : stiff, medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, moist, 20% sand | 80% fines .			50mm PVC Solid
	6	18							
	7	17							
	8	16		CH		Silty to sandy CLAY (CH) : soft, high plasticity, brownish yellow (10yr/6/6), fine grained sand, moist, 10% sand | 90% fines .			
	9	15							

Borehole Record: GW140

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 290,794.82
Northing: 6,278,867.54
Elevation: 24.01(m)
Inclination:

Date Drilled: 24/11/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	13		CH		Silty to sandy CLAY (CH) : soft, high plasticity, brownish yellow (10yr/6/6), fine grained sand, moist, 10% sand | 90% fines .			Bentonite; 50mm PVC Solid; sand pack; 50mm PVC Slotted; Collapse
▽	12	12							
	13	11							
	14	10							
	15	9				**GW140 Terminated at 15m (TargetvDepth Reached)**			
	16	8							
	17	7							
	18	6							
	19	5							

Borehole Record: GW141

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,230.92	**Date Drilled:** 27/11/2023
Location: Richmond NSW	Northing: 6,277,649.72	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.44(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	1	22	GX141/0.4-0.5	SM		Silty SAND (SM) : light reddish brown (5yr/6/4), loose, fine grained, trace low plasticity clay, dry, 80% sand | 20% fines .	D		
	2	21	GX141/1.4-1.5	SC		Clayey SAND (SC) : dusky red (10r/3/4), medium dense, medium grained, with fine to medium sized gravel, moist, 60% sand | 40% fines .	M	Ironstone gravels, 2-12mm, subangular	
	3	20	GX141/2.9-3.0	CI		Silty CLAY (CI) : stiff, medium plasticity, reddish brown (5yr/4/4), trace fine grained sand, moist, 5% sand | 95% fines .			Cement
	4	19							
	5	18		CI		Silty CLAY (CI) : stiff, medium plasticity, light reddish brown (5yr/6/4), trace fine grained sand, moist, 2% sand | 98% fines .			50mm PVC Solid
	6	17							
	7	16		CH		Silty CLAY (CH) : hard, high plasticity, light reddish brown (5yr/6/4), trace fine grained sand, moist, 100% fines .			
	8	15							
	9	14		CH		Silty CLAY (CH) : firm, high plasticity, light reddish brown (5yr/6/4), trace fine grained sand, moist, 100% fines .			
		13		CH		Silty CLAY (CH) : hard, high plasticity, light reddish brown (5yr/6/4), trace fine grained sand, moist, 100% fines .			

Borehole Record: GW141

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,230.92	**Date Drilled:** 27/11/2023
Location: Richmond NSW	Northing: 6,277,649.72	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.44(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	12		CH		Silty CLAY (CH) : firm, high plasticity, light reddish brown (5yr/6/4), trace fine grained sand, moist, 100% fines .			Bentonite
	12	11		CH		Silty CLAY (CH) : hard, high plasticity, light reddish brown (5yr/6/4), trace fine grained sand, moist, 100% fines .			50mm PVC Solid
▼	13	10							sand pack
▽	14	9							50mm PVC Slotted
	15	8							Collapse
	16	7				**GW141 Terminated at 15m (Target Depth Reached)**			
	17	6							
	18	5							
	19	4							
		3							

Borehole Record: GW142

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,152.42	**Date Drilled:** 27/11/2023
Location: Richmond NSW	Northing: 6,277,476.05	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.89(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	1	21	GX142/0.4-0.5	SM		Silty SAND (SM) : pinkish white (10r/8/2), medium dense, fine grained, trace low plasticity clay, dry, 80% sand | 20% fines .	D		
	2	20	GX142/1.4-1.5	SC		Clayey SAND (SC) : light red (10r/6/6), medium dense, fine to medium grained, moist, 60% sand | 40% fines .	M		
			GX142/2.0-2.1	CL		Sandy CLAY (CL) : soft to firm, low plasticity, light red (10r/6/6), medium grained sand, moist, 30% sand | 70% fines .		Very moist, potentially perched aquifer currently not producing groundwater.	
	3	19	GX142/2.9-3.0	CI		Silty CLAY (CI) : stiff, medium plasticity, pinkish white (10r/8/2), moist, 100% fines .			Cement
	4	18							
	5	17		CI		Silty CLAY (CI) : firm, medium plasticity, light red (10r/6/6), with fine sized gravel, moist, 5% gravel | 95% fines .		Ironstone gravels 1-3mm, rounded to subangular	50mm PVC Solid
	6	16							
	7	15							
	8	14							
	9	13							
		12							

Borehole Record: GW142

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,152.42	**Date Drilled:** 27/11/2023
Location: Richmond NSW	Northing: 6,277,476.05	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.89(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11 – 13	11 – 9		CI		Silty CLAY (CI) : firm, medium plasticity, light red (10r/6/6), with fine sized gravel, moist, 5% gravel | 95% fines .			Bentonite; 50mm PVC Solid; sand pack; 50mm PVC Slotted; Collapse
▽	13 – 14	9 – 8		CI		Silty CLAY (CI) : firm, medium plasticity, light red (10r/6/6), with fine grained sand, moist, 5% sand | 95% fines .			
	15 – 19	7 – 3				**GW142 Terminated at 15m (Target Depth Reached)**			
	19	3 – 2							

Borehole Record: GW143

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,535.18	**Date Drilled:** 28/11/2023
Location: Richmond NSW	Northing: 6,278,416.70	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 24.13(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: RL mbg assumed 100mm above TOC

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	24	GX143/0.4-0.5	SM		Silty SAND (SM) : pinkish white (10r/8/2), medium dense, fine grained, dry, 60% sand | 40% fines . **Commenced Boring at 1m**	D		
	1	23							
			GX143/1.4-1.5	SM		Silty to gravelly SAND (SM) : pinkish white (10r/8/2), very dense, fine grained, fine to medium sized gravel, with low plasticity clay, dry, 20% gravel | 50% sand | 30% fines.			
	2	22		SC		Clayey SAND (SC) : pale red (10r/6/4), very dense, fine grained, with medium sized gravel, with low plasticity clay, moist, 10% gravel | 55% sand | 35% fines.	M	Very hard, like weathered rock. Ironstone gravels, 2-15mm, subangular. Orange clay aggregates.	
	3	21	GX143/2.9-3.0	SC		Clayey SAND (SC) : light red (10r/6/6), medium dense, medium grained, moist, 55% sand | 45% fines .			Cement
	4	20		CL		Sandy CLAY (CL) : firm, low plasticity, light yellowish brown (10yr/6/4), medium grained sand, with fine sized gravel, moist, 5% gravel | 40% sand | 55% fines.		Claystone/riverstone gravels, 2-5mm, rounded to subangular	
	5	19							50mm PVC Solid
	6	18		CH		Silty CLAY (CH) : stiff, high plasticity, very pale brown (10yr/8/3), moist, 100% fines .			
	7	17		CH		Silty CLAY (CH) : very stiff, high plasticity, brownish yellow (10yr/6/6), moist, 100% fines .			
	8	16							
	9	15							

Borehole Record: GW143

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,535.18	**Date Drilled:** 28/11/2023
Location: Richmond NSW	Northing: 6,278,416.70	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 24.13(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: RL mbg assumed 100mm above TOC

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	14		CH		Silty CLAY (CH) : very stiff, high plasticity, brownish yellow (10yr/6/6), moist, 100% fines .			Bentonite
	12	13							50mm PVC Solid
▼	13	12							sand pack
▽	14	11		CH		Silty CLAY (CH) : very soft to soft, high plasticity, brownish yellow (10yr/6/6), moist, 100% fines .			50mm PVC Slotted
	15	10							
	16	9				**GW143 Terminated at 14.8m (Target Depth Reached)**			
	17	8							
	18	7							
	19	6							
		5							

Borehole Record: GW144

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,479.42	**Date Drilled:** 29/11/2023
Location: Richmond NSW	Northing: 6,278,836.63	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 18.77(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	18		SM		Silty to gravelly SAND (SM) : pinkish white (10r/8/2), dense, fine grained, fine sized gravel, trace low plasticity clay, moist, 10% gravel | 55% sand | 35% fines.	M		Cement
	1		GX144/0.4-0.5	CH		Silty CLAY (CH) : stiff to very stiff, high plasticity, light red (10r/6/6), trace fine grained sand, moist, 3% sand | 97% fines .			
		17	GX144/1.4-1.5						
	2			CI		Silty to sandy CLAY (CI) : soft, medium plasticity, light red (10r/6/6), fine grained sand, moist, 30% sand | 70% fines .			
		16	GX144/2.4-2.5	SC		Clayey SAND (SC) : light red (10r/6/6), loose, fine grained, moist, 60% sand | 40% fines .		Slightly moist, potentially former perched aquifer currently dry.	
	3		GX144/2.9-3.0	CI		Silty to sandy CLAY (CI) : soft, medium plasticity, light red (10r/6/6), fine grained sand, moist, 30% sand | 70% fines .			50mm PVC Solid
		15		SC		Clayey to silty SAND (SC) : light red (10r/6/6), loose, fine grained, moist, 60% sand | 40% fines .			
	4			CI		Silty to sandy CLAY (CI) : soft, medium plasticity, light red (10r/6/6), fine grained sand, moist, 40% sand | 60% fines .			Bentonite
	5	14							
		13						Sand bringed	sand pack
	6								
	7	12							
		11							
▼	8			CI		Sandy CLAY (CI) : soft, medium plasticity, light red (10r/6/6), fine grained sand, moist, 25% sand | 75% fines .			50mm PVC Slotted
	9	10							
		9				**GW144 Terminated at 10m (Target Depth Reached)**			

Borehole Record: GW145

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,709.06	**Date Drilled:** 29/11/2023
Location: Richmond NSW	Northing: 6,279,080.50	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 18.05(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
		18.0							
			GX145/0.4-0.5	SM		Silty SAND (SM) : red (10r/4/6), dense, fine grained, with fine sized gravel, with low plasticity clay, moist, 5% gravel | 30% sand | 70% fines.	M		
	1	17							
			GX145/1.4-1.5	CI		Silty CLAY (CI) : soft, medium plasticity, red (10r/4/6), moist, 100% fines .			Cement
	2	16							
				SC		Clayey SAND (SC) : light red (10r/6/6), medium dense, medium grained, moist, 75% sand | 25% fines .		soft clay, possible perched, not currently producing water	50mm PVC Solid
	3	15	GX145/2.9-3						
	4	14							
	5	13							
	6	12							Bentonite
	7	11							
▼	8	10							sand pack
	9	9							50mm PVC Slotted

Borehole Record: GW145

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,709.06	**Date Drilled:** 29/11/2023
Location: Richmond NSW	Northing: 6,279,080.50	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 18.05(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	8.05 7		SC		Clayey SAND (SC) : light red (10r/6/6), medium dense, medium grained, moist, 75% sand | 25% fines .			sand pack 50mm PVC Slotted
	12	6							
	13	5				**GW145 Terminated at 12.4m (Target Depth Reached)**			
	14	4							
	15	3							
	16	2							
	17	1							
	18	0							
	19	-1							

Borehole Record: GW146

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,374.77	**Date Drilled:** 30/11/2023
Location: Richmond NSW	Northing: 6,279,364.21	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 17.53(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	17	Gx146/0.4-0.5	SM		Silty SAND (SM) : pinkish white (10r/8/2), medium dense, fine grained, with fine to medium sized gravel, moist to dry, 10% gravel | 60% sand | 30% fines.	M-D	Ironstone gravels, 2-15mm, subangular.	Cement
	1	16	GX1.46/1.4-1.5	CI		Silty CLAY (CI) : very stiff, medium plasticity, light red (10r/6/6), moist to dry, 100% fines .			
	2	15		CI		Silty CLAY (CI) : firm, medium plasticity, light red (10r/6/6), moist to dry, 100% fines .			Bentonite 50mm PVC Solid
	3	14	GX146/2.9-3.0						
	4	13		CI		Silty CLAY (CI) : very stiff, medium plasticity, light red (10r/6/6), moist to dry, 100% fines .			
	5	12		CI		Silty to sandy CLAY (CI) : soft to firm, medium plasticity, light red (10r/6/6), fine grained sand, moist, 30% sand | 70% fines .	M		sand pack
▼	6	11							
▽	7	10		SM		Silty SAND (SM) : light red (10r/6/6), loose, medium grained, trace low plasticity clay, wet, 85% sand | 15% fines .	W		50mm PVC Slotted
	8	9							
	9	8				**GW146 Terminated at 9m (Target Depth Reached)**			Collapse

Borehole Record: GW147

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,497.51	**Date Drilled:** 30/11/2023
Location: Richmond NSW	Northing: 6,277,891.51	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.78(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22	GX147/0.4-0.5	SM		Silty SAND (SM) : pinkish white (10r/8/2), medium dense, fine grained, dry, 70% sand | 30% fines .	D		
	1			CL		Sandy CLAY (CL) : hard, low plasticity, yellow (10yr/8/6), medium grained sand, dry, 40% sand | 60% fines .		Very hard, like weathered rock	
	2	21	GX147/1.4-1.5	CL		Sandy CLAY (CL) : very stiff, low plasticity, yellow (10yr/8/6), medium grained sand, with medium sized gravel, moist, 35% sand | 65% fines .	M	Increasing moisture with depth. White mottle in clay. Quartz gravels, 6-10mm, subangular.	
	3	20	GX147/2.9-3.0	CI		Silty CLAY (CI) : very soft, medium plasticity, pale yellow (5y /8/4), with fine grained sand, moist, 10% sand | 90% fines .		Very moist and very soft clay, potentially perched.	Cement
	4	19		CH		Silty CLAY (CH) : firm, high plasticity, light red (10r/6/6), trace fine grained sand, moist, 2% sand | 98% fines .			50mm PVC Solid
	5	18							
	6	17							
	7	16		CH		Silty CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), trace fine grained sand, moist, 2% sand | 98% fines .			
	8	15							
	9	14		CH		Silty CLAY (CH) : soft, high plasticity, light red (10r/6/6), moist, 100% fines .			
		13		CH		Silty CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), moist, 100% fines .			Bentonite

Borehole Record: GW147

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,497.51	**Date Drilled:** 30/11/2023
Location: Richmond NSW	Northing: 6,277,891.51	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.78(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	12		CH		Silty CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), moist, 100% fines .			Bentonite
	12	11							50mm PVC Solid
▼	13	10		CH		Silty CLAY (CH) : soft, high plasticity, light red (10r/6/6), trace fine grained sand, moist, 2% sand | 98% fines .			sand pack
	14	9							50mm PVC Slotted
	15	8							Collapse
	16	7				**GW147 Terminated at 15m (Target Depth Reached)**			
	17	6							
	18	5							
	19	4							
		3							

Borehole Record: GW148

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,773.81	**Date Drilled:** 01/12/2023
Location: Richmond NSW	Northing: 6,277,460.09	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.40(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22.4							
		22	GX148/0.4-0.5	SM		Silty SAND (SM) : pinkish white (10r/8/2), medium dense, fine grained, trace low plasticity clay, dry, 55% sand | 45% fines .	D		
	1			CL		Sandy CLAY (CL) : firm, low plasticity, pinkish white (10r/8/2), medium grained sand, moist, 45% sand | 55% fines .	M		
		21	GX148/1.4-1.5						
	2			CL		Sandy CLAY (CL) : soft, low plasticity, pinkish white (10r/8/2), medium grained sand, moist, 30% sand | 70% fines .		Orange mottle in clay	
		20							
	3		GX148/2.9-3.0						
		19							Cement
	4			CH		Silty CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), moist, 100% fines .		Banding from firm/soft to very stiff every few meters.	
		18							
	5								50mm PVC Solid
		17							
	6								
		16							
	7								
		15							
	8								
		14							
	9								
		13							

Borehole Record: GW148

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,773.81	**Date Drilled:** 01/12/2023
Location: Richmond NSW	Northing: 6,277,460.09	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.40(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	0	12.4		CH		Silty CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), moist, 100% fines .			Bentonite
	1	12							
	2	11							50mm PVC Solid
	3	11							
	4	10							sand pack
▽	5	9		CH		Silty CLAY (CH) : very soft to soft, high plasticity, light red (10r/6/6), wet, 100% fines .	W		50mm PVC Slotted
	6	8							
	7	7				**GW148 Terminated at 15m (Target Depth Reached)**			
	8	6							
	9	5							
	10	4							
	11	3							

Borehole Record: GW149

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,988.60	**Date Drilled:** 01/12/2023
Location: Richmond NSW	Northing: 6,279,215.15	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 17.18(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	17							
			GX149/0.4-0.5						
	1	16		CH		Silty CLAY (CH) : very stiff, high plasticity, weak red (10r/5/4), moist, 100% fines .	M		Cement
			GX149/1.4-1.5						
	2	15							
				SM		Silty SAND (SM) : pale red (10r/7/4), very dense, fine grained, dry, 75% sand | 25% fines .	D	Very hard, like weathered rock	50mm PVC Solid
	3	14	GX149/2.9-3.0						
				CI		Sandy CLAY (CI) : very stiff, medium plasticity, weak red (10r/5/4), fine grained sand, moist, 20% sand | 80% fines .	M		
	4	13		CI		Sandy CLAY (CI) : firm, medium plasticity, weak red (10r/5/4), fine grained sand, moist, 20% sand | 80% fines .			Bentonite
				SM		Silty SAND (SM) : light red (10r/6/6), loose, fine to medium grained, moist, 75% sand | 25% fines .			
	5	12							
	6	11		CH		Silty CLAY (CH) : stiff, high plasticity, light red (10r/6/6), with fine grained sand, trace fine grained sand, moist, 5% sand | 95% fines .			sand pack
▽	7	10		CH		Silty CLAY (CH) : very soft, high plasticity, light red (10r/6/6), with fine grained sand, trace fine grained sand, wet, 5% sand | 95% fines .	W		50mm PVC Slotted
	8	9							
	9	8				**GW149 Terminated at 9m (Target Depth Reached)**			

Borehole Record: GW150

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,827.11	**Date Drilled:** 07/12/2023
Location: Richmond NSW	Northing: 6,278,313.90	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 16.85(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	16.8							TOC
			GX150/0.4-0.5	SM		Silty to gravelly SAND (SM) : dark bluish gray (5pb/4/1), dense, fine grained, fine to medium sized gravel, dry, 20% gravel | 50% sand | 30% fines.	D		
	1	16							
			GX150/1.4-1.5	CI		CLAY (CI) : very stiff, medium plasticity, light red (10r/6/6), moist to dry, 100% fines .	M-D		Cement
	2	15							
		14	GX150/2.9-3.0	CI		Silty CLAY (CI) : firm, medium plasticity, pale red (10r/6/2), moist, 100% fines .	M		
	3								
	4	13		CH		Silty CLAY (CH) : very stiff, high plasticity, light red (10r/6/6), moist to dry, 100% fines .	M-D		50mm PVC Solid
		12							
	5								
		11							
▼	6								Bentonite
	7	10		CH		Silty CLAY (CH) : soft to firm, high plasticity, light red (10r/6/6), moist to dry, 100% fines .			
		9							sand pack
	8								
	9	8							50mm PVC Slotted
		7							

Borehole Record: GW150

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,827.11	**Date Drilled:** 07/12/2023
Location: Richmond NSW	Northing: 6,278,313.90	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 16.85(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
▽	11	6.85 6 5		Cl		Sandy CLAY (Cl) : very soft, medium plasticity, light red (10r/6/6), fine to medium grained sand, wet, 35% sand | 65% fines .	W		sand pack 50mm PVC Slotted Collapse
	12 13 14 15 16 17 18 19	4 3 2 1 0 -1 -2 -3				**GW150 Terminated at 12m (Target Depth Reached)**			

Borehole Record: GW151

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,601.83
Northing: 6,277,394.40
Elevation: 20.92(m)
Inclination:

Date Drilled: 07/12/2023
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	20	GX151/0.4-0.5	SM		Silty SAND (SM) : pinkish white (10r/8/2), very dense, fine grained, dry, 55% sand | 45% fines .	D		
	1			CI		Sandy CLAY (CI) : very stiff, medium plasticity, light red (10r/6/6), fine grained sand, moist, 30% sand | 70% fines .	M	Decreasing sand content with depth	
	2	19	GX151/1.4-1.5						
	3	18	GX151/2.9-3.0	CH		Silty CLAY (CH) : stiff, high plasticity, light red (10r/6/6), moist, 100% fines .			Cement
	4	17							
	5	16							50mm PVC Solid
	6	15							
	7	14							
	8	13							
	9	12							
				CH		Silty CLAY (CH) : soft, high plasticity, light red (10r/6/6), moist, 100% fines .		Very soft, moist, but not producing water	
		11							

Borehole Record: GW151

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,601.83	**Date Drilled:** 07/12/2023
Location: Richmond NSW	Northing: 6,277,394.40	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20.92(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Sarah Bolton/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	10		CH		Silty CLAY (CH) : soft, high plasticity, light red (10r/6/6), moist, 100% fines .			Bentonite; 50mm PVC Solid
	12	9							sand pack
	13	8							
▽	14	7							50mm PVC Slotted
	15	6							Collapse
	16	5				**GW151 Terminated at 15m (Target Depth Reached)**			
	17	4							
	18	3							
	19	2							
		1							

Borehole Record: GW152

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,916.69	**Date Drilled:** 15/12/2023
Location: Richmond NSW	Northing: 6,279,303.46	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 16.92(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	16	GX152/0.4-0.5			Clayey SILT very stiff, white(10r/8/1), with fine grained sand, dry.	D		Cement
	1	15	GX152/1.4-1.5	CH		Silty CLAY (CH) : very stiff, high plasticity, white(10r/8/1), dry, with orange brown mottling .		From 1.20m, becoming soft.	
	2	14	GX152/2.9-3.0	CH		Silty CLAY (CH) : firm, high plasticity, yellow(10yr/8/8), dry.			50mm PVC Solid
	3	13		CH		CLAY (CH) : soft, high plasticity, yellow(10yr/7/8), dry.			Bentonite ( )
▼	4	12							
	5	11							
	6	10							sand pack
	7	9							50mm PVC Slotted
▽	8	8							
	9	7							

Borehole Record: GW152

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,916.69	**Date Drilled:** 15/12/2023
Location: Richmond NSW	Northing: 6,279,303.46	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 16.92(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
				CH		CLAY (CH) : soft, high plasticity, yellow(10yr/7/8), dry.			sand pack; 50mm PVC Slotted; Collapse
	11	6				**GW152 Terminated at 10.5m**			
	12	5							
	13	4							
	14	3							
	15	2							
	16	1							
	17	0							
	18	-1							
	19	-2							
		-3							

Borehole Record: GW153

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,532.60	**Date Drilled:** 08/01/2024
Location: Richmond NSW	Northing: 6,278,257.50	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.11(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	23		SM		Silty SAND (SM) : grayish brown(10yr/5/2), medium grained, dry.	D		
			GX153/0.4-0.5						
	1	22		Cl		Sandy CLAY (Cl) : firm, medium plasticity, very pale brown(10yr/7/3), medium grained sand, trace fine sized gravel, dry.			
				SM		Silty SAND (SM) : yellow(10yr/8/6), loose to medium dense, fine grained, trace fine sized gravel, dry.			
			GX153/1.4-1.5						
	2	21		SM		Silty to gravelly SAND (SM) : brownish yellow(10yr/6/8), medium dense, medium grained, moist, from 2.5m, rare fine gravel.	M	Driller added water	
			GX153/2.9-3.0						
	3	20		Cl		**Sandy CLAY (Cl) : firm to stiff, medium plasticity, yellowish brown(10yr/5/6), medium grained sand, moist, from 4.0m, soft.**			Cement
	4	19		Cl					
	5	18		CH		CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/4), organic, moist, mottled light grey. from 6.0m, soft brown clay. from 9.0m, sandy clay (20% sand).			50mm PVC Solid
	6	17							
	7	16							
	8	15							
	9	14							Bentonite

Borehole Record: GW153

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,532.60	**Date Drilled:** 08/01/2024
Location: Richmond NSW	Northing: 6,278,257.50	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 23.11(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11–16	13–7		CH		CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/4), organic, moist, mottled light grey. from 6.0m, soft brown clay. from 9.0m, sandy clay (20% sand).		Water strike with very soft clay layer	50mm PVC Solid; sand pack; 50mm PVC Slotted
	17–19	6–4				**GW153 Terminated at 16.1m**			

Borehole Record: GW154

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,439.29	**Date Drilled:** 08/01/2024
Location: Richmond NSW	Northing: 6,277,614.81	**Drill Rig** Canter Truck
Loc Comment: Perched aquifer	**Elevation:** 22.39(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Jenna Maltman/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	22	GX154/0.4-0.5	SM		Silty SAND (SM) : brown(7.5yr/5/3), medium dense, medium grained, dry.	D		Cement
	1			Cl		CLAY (Cl) : firm, medium plasticity, brownish yellow(10yr/6/8), dry.			
		21	GX154/1.4-1.5	Cl		Sandy CLAY (Cl) : soft, medium plasticity, brownish yellow(10yr/6/8), medium grained sand, dry, mottled light grey. from 1.50m, moist with trace fine gravel .			50mm PVC Solid
	2								Bentonite
		20							
	3		GX154/3-3.1						
perched water		19		Cl		Sandy CLAY (Cl) : very soft, medium plasticity, very pale brown(10yr/8/3), fine grained sand, moist.	M		sand pack
	4			Cl		Sandy CLAY (Cl) : soft, medium plasticity, brownish yellow(10yr/6/6), fine grained sand, moist.			50mm PVC Slotted
		18							
	5					**GW154 Terminated at 5m**			
		17							
	6								
		16							
	7								
		15							
	8								
		14							
	9								
		13							

Borehole Record: GW155

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,473.30	**Date Drilled:** 09/01/2024
Location: Richmond NSW	Northing: 6,277,985.09	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.70(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22.7		SM		Silty SAND (SM) : light brownish gray(10yr/6/2), loose, medium grained, dry.	D		
		22	GX155/0.5-0.6						
	1			CI		Sandy CLAY (CI) : firm, medium plasticity, brownish yellow(10yr/6/8), medium grained sand, moist.	M		
				CL		Sandy CLAY (CL) : firm, low plasticity, pale brown(10yr/6/3), medium grained sand, moist, pockets of soft clay. from 2.50m, more moisture.			
	2	21	GX155/1.4-1.5						
		20		CI		Sandy CLAY (CI) : soft, medium plasticity, light gray(5yr/7/1), fine grained sand, moist.			
	3		GX155/2.9-3.0						Cement
		19		CL		Sandy CLAY (CL) : firm, low plasticity, yellowish brown(10yr/5/6), fine to medium grained sand, moist.			
	4			CH		Sandy CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/6), fine to medium grained sand, moist, from 6.0m, 2% sand.			
		18							
	5								50mm PVC Solid
		17							
	6								
		16							
	7								
		15							
	8								
		14							
	9								
		13							

Borehole Record: GW155

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 290,473.30	**Date Drilled:** 09/01/2024
Location: Richmond NSW	Northing: 6,277,985.09	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 22.70(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	12.7		CH		Sandy CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/6), fine to medium grained sand, moist, from 6.0m, 2% sand.			Cement
	1	12							Bentonite
	1	11		SC		Clayey SAND (SC) : very pale brown(10yr/7/4), loose, fine to medium grained, wet.	W		50mm PVC Solid
▼	2	10		CH		Sandy CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/6), fine to medium grained sand, moist, from 13.0m, soft with greater sand proportion .	M	Soft clay struck suggesting water	sand pack
▽	3	9							50mm PVC Slotted
	4	8							
	5	7				**GW155 Terminated at 15m**			
	6	6							
	7	5							
	8	4							
	9	3							

Borehole Record: GW156

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,596.11	**Date Drilled:** 09/01/2024
Location: Richmond NSW	Northing: 6,278,334.70	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 19.37(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	19	GX156/0.4-0.5/ DS7b/TS7b	SC		Clayey to gravelly SAND (SC) : very dark grayish brown(10yr/3/2), very loose, fine to medium grained, fine to medium sized gravel, dry.	D		Cement
	1	18	GX156/1.4-1.5	Cl		Sandy to silty CLAY (Cl) : firm, medium plasticity, yellowish brown(10yr/5/8) mottled grey and orange, fine to medium grained sand, dry.			
	2	17							
	3	16	GX156/3.0-3.1						
	4	15		Cl		Sandy CLAY (Cl) : soft, medium plasticity, brown(10yr/5/3), fine grained sand, moist.	M		50mm PVC Solid
	5	14							
	6	13		SC		Clayey SAND (SC) : light yellowish brown(10yr/6/4), medium dense, medium grained, moist.			
	7	12		Cl		Sandy CLAY (Cl) : very soft to soft, medium plasticity, brownish yellow(10yr/6/6), fine to medium grained sand, moist, from 9.0m, sand 10% fines 90%. from 10.0m, wet very soft sandy clay..			Bentonite
	8	11							
▼	9	10							sand pack
									50mm PVC Slotted

Borehole Record: GW156

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,596.11	**Date Drilled:** 09/01/2024
Location: Richmond NSW	Northing: 6,278,334.70	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 19.37(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▽	11	8		CI		Sandy CLAY (CI) : very soft to soft, medium plasticity, brownish yellow(10yr/6/6), fine to medium grained sand, moist, from 9.0m, sand 10% fines 90%, from 10.0m, wet very soft sandy clay..		Very soft wet clay recovered, probable water strike	sand pack 50mm PVC Slotted
	12	7				**GW156 Terminated at 12m**			
	13	6							
	14	5							
	15	4							
	16	3							
	17	2							
	18	1							
	19	0							

Borehole Record: GW157

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,992.42	**Date Drilled:** 10/01/2024
Location: Richmond NSW	Northing: 6,277,368.26	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20.23(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	20		CL		Sandy CLAY (CL) : soft, low plasticity, very dark grayish brown(10yr/3/2), fine to medium grained sand, dry.	D		
	1	19	GX157/0.5-0.6	SM		Sandy SILT (SM) : firm, brownish yellow(10yr/6/8), fine grained sand, dry, from 2.5m, less sand (10%) and darker with red mottling.			
	2	18	GX157/1.5-1.6						
	3	17	GX157/3.0-3.1						Cement
	4	16		CH		Sandy CLAY (CH) : soft to firm, high plasticity, brown(10yr/5/3), fine to medium grained sand, moist to dry.	M-D		
	5	15							50mm PVC Solid
	6	14							
	7	13							
	8	12		CI		Sandy CLAY (CI) : very soft to soft, medium plasticity, light yellowish brown(10yr/6/4), fine to medium grained sand, moist.	M		
	9	11							Bentonite
				CI		Sandy CLAY (CI) : soft, medium plasticity, very pale brown(10yr/7/4), fine to medium grained sand, moist, between 10.5-10.7, very hard layer. auger is catching on something.			

Borehole Record: GW157

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,992.42	**Date Drilled:** 10/01/2024
Location: Richmond NSW	Northing: 6,277,368.26	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 20.23(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	9		CI		Sandy CLAY (CI) : soft, medium plasticity, very pale brown(10yr/7/4), fine to medium grained sand, moist, between 10.5-10.7, very hard layer. auger is catching on something.			50mm PVC Solid
	12	8							sand pack
	13	7							
	14	6		CH		Sandy CLAY (CH) : soft to firm, high plasticity, yellowish brown(10yr/5/4), fine to medium grained sand, moist, at 14.5m, soft.			
▽	15	5						Driller suggests wet at 14.5m due to soft ground	50mm PVC Slotted
	16	4		CL		Sandy CLAY (CL) : soft, low plasticity, light gray(10yr/7/1), fine to medium grained sand, wet.	W		
	17	3				**GW157 Terminated at 16m**			
	18	2							
	19	1							

Borehole Record: GW158

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,369.39
Northing: 6,277,904.58
Elevation: 22.71(m)
Inclination:

Date Drilled: 11/01/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Joseph Unwin/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22		SW		Fill Gravelly SAND very pale brown(10yr/8/2), moderately compacted, fine to medium to coarse grained, fine to medium to coarse sized gravel, dry.	D	Crushed sandstone road fill below gravel track surface	
				SM		Silty SAND (SM) : light brownish gray(10yr/6/2), medium dense, fine to medium grained, moist.	M		
			GX158/0.5-0.6						
	1					Sandy CLAY (CI) : firm, medium plasticity, yellowish brown(10yr/5/4), fine to medium grained sand, moist, from 2.50m, sandy gravelly clay 10% sand 5% gravel 85% clay.			
		21	GX158/1.4-1.5	CI					
	2								
		20							
	3		GX158/3.0-3.1						
						CLAY (CI) : firm, medium plasticity, reddish brown(5yr/4/4), trace fine sized gravel, trace fine to medium grained sand, moist, from 5.0m, brown with 15% sand 85% fines.			Cement
		19							
	4								
		18							
	5								50mm PVC Solid
		17		CI					
	6								
		16							
	7								
		15							
	8					Clayey SAND (SC) : yellowish brown(10yr/5/6), medium dense, fine to medium grained, moist.		From 8.0m soft ground but augers meet resistance when redrilling, potentially due to sandy nature of soil.	
		14		SC					
	9								
		13							

Borehole Record: GW158

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,369.39
Northing: 6,277,904.58
Elevation: 22.71(m)
Inclination:

Date Drilled: 11/01/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Joseph Unwin/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▽ ▼	11–17	12–6		SC		Clayey SAND (SC) : yellowish brown(10yr/5/6), medium dense, fine to medium grained, moist.		At 13.0m, installed pipe to 13.0m, hole dry, progressed to 17.0m	Cement; Bentonite; 50mm PVC Solid; sand pack; 50mm PVC Slotted; Collapse
	17–19	5–3				**GW158 Terminated at 17m**			

Borehole Record: GW159

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,227.53
Northing: 6,277,818.09
Elevation: 22.41(m)
Inclination:

Date Drilled: 11/01/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Joseph Unwin/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	22	GX159/0.4-0.5	SM		Silty SAND (SM) : pale brown(10yr/6/3), loose, fine to medium grained, dry.	D		
	1			CI		Sandy CLAY (CI) : firm, medium plasticity, yellowish brown(10yr/5/6), fine to medium grained sand, dry.			
		21	GX159/1.4-1.5	SM		Silty to gravelly SAND (SM) : yellowish brown(10yr/5/8), medium dense, fine to medium to coarse grained, fine to medium sized gravel, moist, weathered sandstone.	M		
	2	20		SM					
	3		GX159/3.0-3.1/						
		19		CI		Silty CLAY (CI) : firm, medium plasticity, brown(7.5yr/5/4), moist.		From 5.0m, reddish brown	Cement
	4	18							
	5								50mm PVC Solid
		17							
	6	16							
	7								
		15		CI		Sandy CLAY (CI) : soft, medium plasticity, yellowish brown(10yr/5/6), fine to medium grained sand, moist.			
	8	14							
	9								
		13		CH		Sandy CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/8), fine to medium grained sand, moist.			

Borehole Record: GW159

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment:
Job No: 2301034b

Position: Easting: 291,227.53
Northing: 6,277,818.09
Elevation: 22.41(m)
Inclination:

Date Drilled: 11/01/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Joseph Unwin/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼ ▽	0	12		CH		Sandy CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/8), fine to medium grained sand, moist.			Bentonite (undefined)
	1	11							50mm PVC Solid
	2	10							sand pack (undefined)
	3	9							50mm PVC Slotted
	4	8							Collapse (undefined)
	5	7				**GW159 Terminated at 15m**			
	6	6							
	7	5							
	8	4							
	9	3							

Borehole Record: GW160

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,352.80	**Date Drilled:** 12/01/2024
Location: Richmond NSW	Northing: 6,277,366.87	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.79(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	21	GX160/0.5-0.6	SM		Silty SAND (SM) : very pale brown(10yr/7/3), loose, fine to medium grained, dry.	D		
	1								
		20	GX160/1.4-1.5	SC		Clayey to gravelly SAND (SC) : brownish yellow(10yr/6/8) mottled grey, medium dense, fine to medium to coarse grained, fine to medium sized gravel, dry.			
	2								
		19		CH		Sandy CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/8), fine grained sand, dry.		From 3.0m, yellowish brown and light grey sandy clay (15% sand 85% fines)	Cement
	3		GX160/3.0-3.1						
		18							
	4								
		17		CH		Sandy CLAY (CH) : firm, high plasticity, reddish brown(5yr/4/4), fine grained sand, dry, from 6.0m, brown .			50mm PVC Solid
	5								
		16							
	6								
		15							
	7								
		14							
	8								
		13							
	9								
		12							

Borehole Record: GW160

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,352.80	**Date Drilled:** 12/01/2024
Location: Richmond NSW	Northing: 6,277,366.87	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.79(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	11		CH		Sandy CLAY (CH) : firm, high plasticity, reddish brown(5yr/4/4), fine grained sand, dry, from 6.0m, brown .			Cement; Bentonite; 50mm PVC Solid
	12	10							
▼	13	9							sand pack
▽	14	8		SC		Clayey SAND (SC) : reddish yellow(7.5yr/6/8), medium dense, fine to medium grained, moist.	M		50mm PVC Slotted
	15	7							
	16	6		CI		Sandy CLAY (CI) : firm, medium plasticity, brownish yellow(10yr/6/8), fine to medium grained sand, moist.			Collapse
	17	5				**GW160 Terminated at 16m**			
	18	4							
	19	3							
		2							

Borehole Record: GW161

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,420.31	**Date Drilled:** 12/01/2024
Location: Richmond NSW	Northing: 6,277,185.95	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.64(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	21	GX161/0.4-0.5	SM		Silty SAND (SM) : very pale brown(10yr/7/4), loose, fine to medium grained, moist.	M		
	1			CI		Sandy CLAY (CI) : firm, medium plasticity, yellowish brown(10yr/5/8), fine to medium grained sand, moist.			
		20	GX161/1.4-1.5						
	2			CH		Sandy CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/8), fine grained sand, moist.			
		19							Cement
	3		GX161/2.9-3.0						
		18		CH		Sandy CLAY (CH) : firm, high plasticity, reddish brown(5yr/5/4), fine grained sand, moist.			
	4								
		17							50mm PVC Solid
	5								
		16							
	6			CL		Sandy CLAY (CL) : low plasticity, grayish brown (10yr/5/2), fine to medium grained sand, moist.		From 7.0m, 40% sand 60% clay with medium plasticity	
	7	15							
		14							
	8								
		13							
	9			CH		Sandy CLAY (CH) : soft, high plasticity, brown (10yr/5/3), fine grained sand, moist.			
		12							

Borehole Record: GW161

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 291,420.31	**Date Drilled:** 12/01/2024
Location: Richmond NSW	Northing: 6,277,185.95	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 21.64(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	11		CH		Sandy CLAY (CH) : soft, high plasticity, brown (10yr/5/3), fine grained sand, moist.		From 10.0m, Firm	Cement
	12	10							Bentonite
									50mm PVC Solid
	13	9							
▽	14	8						From 13.5m, Soft	sand pack
	15	7							
	16	6							50mm PVC Slotted
	17	5				**GW161 Terminated at 16m**			
	18	4							
	19	3							
		2							

Borehole Record: GW162

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 293,293.52	**Date Drilled:** 30/01/2024
Location: Richmond NSW	Northing: 6,276,887.54	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 18.59(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	18	GX162/0.4-0.5	SM		Sandy SILT (SM) : soft, medium plasticity, dark grayish brown(10yr/4/2), fine to medium grained sand, dry.	D		
				CH		Gravelly CLAY (CH) : firm, high plasticity, yellowish brown(10yr/5/6), fine sized gravel, dry.			
	1	17	GX162/1.4-1.5	CH		Sandy CLAY (CH) : stiff, high plasticity, brownish yellow(10yr/4/3) mottledlight grey and orange, fine grained sand, dry.			
	2	16							
	3	15	GX162/2.9-3.0	CH		Sandy CLAY (CH) : stiff, high plasticity, reddish brown(5yr/4/3), fine to medium grained sand, dry.			Cement
	4	14							
	5	13		CH		Sandy CLAY (CH) : stiff, high plasticity, yellowish brown(10yr/5/4), fine to medium grained sand, moist.	M		50mm PVC Solid
	6	12							
	7	11		CH		Sandy CLAY (CH) : soft, high plasticity, light yellowish brown(10yr/6/4), fine grained sand, moist.			
	8	10							
	9	9							Bentonite

Borehole Record: GW162

Project: Privileged and Confidential - Richmond ESA	**Position:** Easting: 293,293.52	**Date Drilled:** 30/01/2024
Location: Richmond NSW	Northing: 6,276,887.54	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 18.59(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034b	**Inclination:**	**Logged/Checked:** Joseph Unwin/David Gregory

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
▽	11	8		CH		Sandy CLAY (CH) : soft, high plasticity, light yellowish brown(10yr/6/4), fine grained sand, moist.			50mm PVC Solid
	12	7		CH		Silty CLAY (CH) : soft, high plasticity, very pale brown(10yr/7/3), wet.	W		sand pack
	13	6							50mm PVC Slotted
									Collapse
	14	5				**GW162 Terminated at 13.5m**			
	15	4							
	16	3							
	17	2							
	18	1							
	19	0							
		-1							

Borehole Record: GW163

Project: Privileged and Confidential - Richmond ESA
Location: Richmond NSW
Loc Comment: Perched aquifer
Job No: 2301034b

Position: Easting: 291,417.48
Northing: 6,278,139.65
Elevation: 22.59(m)
Inclination:

Date Drilled: 22/01/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Jenna Maltman/David Gregory

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
				SP		Fill Gravelly SAND reddish brown (5yr/4/4), coarse grained, medium sized gravel, dry, 20% gravel | 80% sand .	D		Cement
				GW		Fill Sandy GRAVEL very dark brown (10yr/2/2), medium to coarse sized, medium grained sand, dry, 80% gravel | 20% sand .			
		22	GX163/0.4-0.5 / DS9b / TS9b	SM		Silty SAND (SM) : yellowish red (5yr/5/6), medium dense, fine to medium grained, dry, 75% sand | 25% fines .			
▽	1			SC		Clayey SAND (SC) : very pale brown (10yr/7/4), medium dense, fine grained, wet, 60% sand | 40% fines .	W	wet at 0.9m	50mm PVC Solid
			GX163/1.0-1.1						Bentonite
		21	GX163/1.5-1.6						
▼	2			Cl		Sandy CLAY (Cl) : soft, medium plasticity, brownish yellow (10yr/6/6), fine to medium grained sand, wet, 40% sand | 60% fines .			
		20		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), medium dense, fine to medium grained, moist, 70% sand | 30% fines .	M	moist clayey sand	sand pack (null)
	3	19							50mm PVC Slotted
	4			Cl		Sandy CLAY (Cl) : soft, medium plasticity, brownish yellow (10yr/6/6), medium grained sand, moist to dry, 15% sand | 85% fines .	M-D		
		18		CH		Sandy CLAY (CH) : firm, high plasticity, light brownish gray (10yr/6/2), fine grained sand, dry, 5% sand | 95% fines .	D		
	5					**GW163 Terminated at 5m**			
		17							
	6								
		16							
	7								
		15							
	8								
		14							
	9								
		13							

Borehole Record: GW164

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 292,862.07	**Date Drilled:** 29/01/2024
Location: Richmond NSW, Australia	Northing: 6,278,931.69	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 17.18(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	17		SM		Silty SAND (SM) : dark grayish brown (10yr/4/2), medium dense, fine grained, trace medium sized gravel, trace low to medium plasticity clay, dry.	D		Concrete Cement
			GX164/0.4-0.5	CI		Silty CLAY (CI) : stiff, medium plasticity, very pale brown (10yr/7/4), trace fine grained sand, dry.			
	1	16				Silty CLAY (CI) : firm to stiff, medium plasticity, brownish yellow (10yr/6/6), trace fine grained sand, dry.			
			GX164-1.4-1.5						
	2	15							
			GX164/2.9-3.0						50mm PVC Solid
	3	14		CI					
	4	13							Bentonite
	5	12							
	6	11				Gravelly SAND (SP) : brownish yellow (10yr/6/6), coarse grained, coarse sized gravel, trace low plasticity clay, dry.		Between 5.50-7.00m, large cobbles	sand pack
▽	7	10		SP					50mm PVC Slotted
▼	8	9							
	9	8				**GW164 Terminated at 9m**			Collapse

Borehole Record: GW165

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 292,872.54	**Date Drilled:** 23/01/2024
Location: Richmond NSW, Australia	Northing: 6,279,209.27	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 19.07(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	19		SM		Silty SAND (SM) : dark reddish brown (5yr/3/2), medium dense, fine to medium grained, trace medium sized gravel, trace medium plasticity clay, moist.	M		
			GX165/0.4-0.5	SP		Gravelly SAND (SP) : reddish brown (5yr/4/3), loose, medium grained, fine sized gravel, trace low plasticity clay, dry.	D		
	1	18	GX165/1-1.1	SC		Clayey to gravelly SAND (SC) : dark grayish brown (10yr/4/2), medium dense, medium to coarse grained, fine to medium sized gravel, dry.		From 1.60 m, larger gravels	Cement
			GX165/1.5-1.6						
	2	17							
				CI-CH		Silty CLAY (CI-CH) : firm, medium to high plasticity, very pale brown (10yr/8/2), with fine sized gravel, trace medium grained sand, dry.			
	3	16	GX165/2.9-3.0	CI		Silty CLAY (CI) : soft to firm, medium plasticity, brownish yellow (10yr/6/6), trace fine grained sand, dry.			50mm PVC Solid
	4	15							
	5	14							
	6	13							Bentonite
	7	12							
	8	11							sand pack
	9	10							
▼									

Borehole Record: GW165

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 292,872.54	**Date Drilled:** 23/01/2024
Location: Richmond NSW, Australia	Northing: 6,279,209.27	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 19.07(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	11	8		CI		Silty CLAY (CI) : soft to firm, medium plasticity, brownish yellow (10yr/6/6), trace fine grained sand, dry.			50mm PVC Solid
▽	12	7		SC		Clayey SAND (SC) : brownish yellow (10yr/6/6), loose, fine grained, wet.	W		sand pack
	13	6		CI		Silty CLAY (CI) : firm, medium plasticity, very pale brown (10yr/8/2), trace fine grained sand, dry.	D		50mm PVC Slotted
	14	5				**GW165 Terminated at 14m**			Collapse
	15	4							
	16	3							
	17	2							
	18	1							
	19	0							

Borehole Record: GW166

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 292,941.78	**Date Drilled:** 23/01/2024
Location: Richmond NSW, Australia	Northing: 6,279,476.77	**Drill Rig** Canter Truck
Loc Comment: Perched aquifer	**Elevation:** 19.23(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	19		CL-CI		Sandy CLAY (CL-CI) : soft, low to medium plasticity, reddish gray (5yr/5/2), fine grained sand, moist.	M		Concrete Cement
			GX166/0.4-0.5						
	1	18		CL		Sandy CLAY (CL) : soft, low plasticity, brownish yellow (10yr/6/6), medium to coarse grained sand, dry.			
			GX166/1.4-1.5						50mm PVC Solid
	2	17					D	Between 1.80-2.90 m, Rounded gravels	Bentonite
▼	3	16	GX166/2.9-3.0						
								From 3.50 m, Gradually more moisture	sand pack
▽	4	15		CI-CH		Silty CLAY (CI-CH) : soft, medium to high plasticity, very pale brown (10yr/7/4), trace fine grained sand, moist.	M	From 4.0 m, Moist; water perched on clay	50mm PVC Slotted
	5	14							
	6					**GW166 Terminated at 6m**			
	7	13							
		12							
	8	11							
	9	10							

Borehole Record: GW167

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,615.82	**Date Drilled:** 30/01/2024
Location: Richmond NSW, Australia	Northing: 6,278,970.08	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.17(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	15		CI		Silty CLAY (CI) : firm, medium plasticity, dark grayish brown (10yr/4/2), dry.	D		Cement
	1	14	GX167/0.4-0.5	CL		SILT (CL) : stiff, medium plasticity, brownish yellow (10yr/6/6), dry.			
	2	13	GX167/1.4-1.5						50mm PVC Solid
	3	12	GX167/2.9-3.0						
	4	11							Bentonite
	5	10							
	6	9		CI		Sandy CLAY (CI) : soft, medium plasticity, dark grayish brown (10yr/4/2), fine to medium grained sand, dry.			sand pack
▽	7	8		SC		Clayey SAND (SC) : yellowish brown (10yr/5/4), loose, fine to medium grained, wet.	W	At 6.30 m, large rounded gravel and cobbles	50mm PVC Slotted
	8	7							
	9	6				**GW167 Terminated at 8.5m**			

Borehole Record: GW168

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,348.62	**Date Drilled:** 24/02/2024
Location: Richmond NSW, Australia	Northing: 6,278,865.82	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.31(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	15				Silty CLAY (Cl) : firm, medium plasticity, yellowish brown (10yr/5/4), with fine grained sand, dry.			Cement
			GX168/0.4-0.5						
	1	14							
			GX168/1.4-1.5	Cl			D	At 1.50 m, less moisture	
	2	13							50mm PVC Solid
			GX168/2.9-3.0						
	3	12							Bentonite
				Cl		Sandy CLAY (Cl) : firm, medium plasticity, yellowish brown (10yr/5/4), fine grained sand, dry.			
	4	11							
				Cl		Silty to sandy CLAY (Cl) : soft, medium plasticity, yellowish brown (10yr/5/4), fine grained sand, dry.			
	5	10							sand pack
▽									
	6	9				Clayey SAND (SC) : brownish yellow (10yr/6/6), loose, medium grained, wet.			
▼				SC			W	Between 5.00-8.00 m, large gravels	50mm PVC Slotted
	7	8							
	8					**GW168 Terminated at 8m**			
		7							
	9	6							

Borehole Record: GW169

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,085.56	**Date Drilled:** 24/01/2024
Location: Richmond NSW, Australia	Northing: 6,278,613.25	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.09(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	15							
			GX169/0.4-0.5						
	1	14							Cement
			GX169/1.4-1.5	Cl		Silty CLAY (Cl) : firm, medium plasticity, brownish yellow (10yr/6/6), dry.	D		
	2	13							50mm PVC Solid
			GX169/2.9-3.0						
	3	12							Bentonite
	4	11		Cl		Silty CLAY (Cl) : soft, medium plasticity, yellowish brown (10yr/5/4), moist.	M		
▽	5	10							sand pack
▼	6	9		Cl		Sandy CLAY (Cl) : soft, medium plasticity, yellowish brown (10yr/5/4), fine to medium grained sand, wet.	W		50mm PVC Slotted
	7	8							
	8	7				**GW169 Terminated at 7.5m**			
	9	6							

Borehole Record: GW170

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,610.69	**Date Drilled:** 27/02/2024
Location: Richmond NSW, Australia	Northing: 6,278,177.19	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.19(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	15							
			GX170/0.4-0.5	CI		Silty CLAY (CI) : firm, medium plasticity, reddish gray(10r/5/1), trace fine grained sand, dry, rootlets.	D		
	1	14							
			GX170/1.4-1.5 DS4c TS4c	CL		Sandy CLAY (CL) : soft, low plasticity, very pale brown(10yr/7/4), fine to medium grained sand, slightly moist.	SLM		Cement
	2	13		SC		Clayey SAND (SC) : very pale brown(10yr/8/3), loose, fine to medium grained, dry.	D		
	3	12		CL		Sandy CLAY (CL) : soft, low plasticity, dark yellowish brown(10yr/4/4), fine grained sand, slightly moist.	SLM		50mm PVC Solid
	4	11		CI		Sandy CLAY (CI) : soft, medium plasticity, dark yellowish brown(10yr/4/4), fine grained sand, with medium plasticity silt, slightly moist.			
	5	10		CI		**Silty CLAY (CI) : very soft to soft, medium plasticity, dark yellowish brown(10yr/4/4), moist.**	M		
▼	6	9							Bentonite
	7	8		CI					
▽	8	7						getting moist to wet around 8m	sand pack
	9	6							50mm PVC Slotted

Borehole Record: GW170

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,610.69	**Date Drilled:** 27/02/2024
Location: Richmond NSW, Australia	Northing: 6,278,177.19	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.19(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
		5		CI		Silty CLAY (CI) : very soft to soft, medium plasticity, dark yellowish brown(10yr/4/4), moist.			sand pack 50mm PVC Slotted
	11	4				**GW170 Terminated at 10.5m**			
	12	3							
	13	2							
	14	1							
	15	0							
	16	-1							
	17	-2							
	18	-3							
	19	-4							

Borehole Record: GW171

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,940.49	**Date Drilled:** 25/03/2024
Location: Richmond NSW, Australia	Northing: 6,278,489.23	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 14.78(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	14		ML		Clayey SILT (ML) : soft, medium plasticity, dark grayish brown(10yr/4/2), slightly moist.	SLM		Cement
	1			ML		Clayey SILT (ML) : firm, low plasticity, pinkish gray(7.5yr/6/2), dry.	D		
			GX171/0.4-0.5 DS5C TS5C						
				CL		Sandy CLAY (CL) : firm, low plasticity, brownish yellow(10yr/6/6) mottled grey, fine grained sand, dry.			
			GX171/1.4-1.5						
	2	13		SM		Silty SAND (SM) : yellow(10yr/7/8), medium dense, fine grained, dry.		From 2.30m, Slightly moist	
	3	12	GX171/2.9-3.0			Sandy CLAY soft, yellowish brown(10yr/5/6), fine to medium grained sand, moist, from 3.5 m, sand 20% fines 80%.	M		50mm PVC Solid
	4	11							
	5	10		CI		Silty CLAY (CI) : very soft, medium plasticity, gray(10yr/5/1), moist.			
▼	6	9							Bentonite
	7	8							
	8	7							sand pack
	9	6		CI		Sandy CLAY (CI) : soft to firm, medium plasticity, brown(7.5yr/4/3), fine grained sand, moist.			50mm PVC Slotted
▽ water rose to 9.0m on augers		5		CI		Sandy CLAY (CI) : very soft, medium plasticity, brownish yellow(10yr/6/6), moist.			

Borehole Record: GW171

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,940.49	**Date Drilled:** 25/03/2024
Location: Richmond NSW, Australia	Northing: 6,278,489.23	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 14.78(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
				CI		Sandy CLAY (CI) : very soft, medium plasticity, brownish yellow(10yr/6/6), moist.			sand pack 50mm PVC Slotted
	11	4				**GW171 Terminated at 10.5m**			
	12	3							
	13	2							
	14	1							
	15	0							
	16	-1							
	17	-2							
	18	-3							
	19	-4							
		-5							

Borehole Record: GW172

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 293,995.29	**Date Drilled:** 29/01/2024
Location: Richmond NSW, Australia	Northing: 6,277,935.52	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.84(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
				CL-CI		Sandy CLAY (CL-CI) : soft, low to medium plasticity, 5yr/2/2, fine to medium grained sand, slightly moist.	SLM		
			GX170/0.4-0.5	CL		Sandy CLAY (CL) : firm, low plasticity, dark reddish brown(5yr/3/4), fine grained sand, dry.	D	At 2.50 m, higher sand content	Cement
			GX170/1.4-1.5 / DS1c / TS1c						
			GX170/2.9-3.0	CI		Sandy CLAY (CI) : soft, medium plasticity, yellowish red(5yr/5/6), fine grained sand, slightly moist.	SLM		50mm PVC Solid
									Bentonite
				SC		Clayey SAND (SC) : weak red(10r/5/4), medium dense, fine to medium grained.			sand pack
▽						**Clayey SILT soft, medium plasticity, reddish brown(5yr/5/4).**			50mm PVC Slotted
						GW172 Terminated at 9m			

Borehole Record: GW173

Project: Priviledged and Confidential - Richmond
Location: Richmond NSW, Australia
Loc Comment:
Job No: 2301034c

Position: Easting: 293,451.52
Northing: 6,279,189.11
Elevation: 17.42(m)
Inclination:

Date Drilled: 26/02/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Catriona Bisits

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
						Sandy to silty SAND dark grayish brown(10yr/4/2), medium dense, fine grained, fine grained sand, slightly moist.	SLM		
	1	17	GX173/0.4-0.5 DS3c / TS3c	CI		Silty CLAY (CI) : firm, medium plasticity, brownish yellow(10yr/6/6), with fine grained sand, slightly moist to dry.	SLM-D		
	2	16	GX173/1.4-1.5	CL		Sandy CLAY (CL) : firm, low plasticity, yellow(10yr/7/8), fine to medium grained sand, dry.	D		-Cement (30 L grout filled to 1m below ground surface.) 50mm PVC Solid -Bentonite (potentially may have sunk deeper under weight of grout)
	3	15							
	4	14							
	5	13							
	6	12							
	7	11						Between 6.20-6.80 m, frequent gravels/cobbles	
	8	10				Clayey to silty CLAY (CI) : soft, medium plasticity, brownish yellow(10yr/6/6), slightly moist to dry.			-sand pack (difficulty measuring sandpack due to volume of water and collapse. sand bridged, top was measured at 6.3mbg)
▼	9	9		CI			SLM-D		
		8							

Borehole Record: GW173

Project: Priviledged and Confidential - Richmond
Location: Richmond NSW, Australia
Loc Comment:
Job No: 2301034c

Position: Easting: 293,451.52
Northing: 6,279,189.11
Elevation: 17.42(m)
Inclination:

Date Drilled: 26/02/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Catriona Bisits

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▽	11	7		CI		Clayey to silty CLAY (CI) : soft, medium plasticity, brownish yellow(10yr/6/6), slightly moist to dry.	SLM-D	Drilling much softer at 10.5mbg. Augers wet after this depth.	50mm PVC Solid sand pack (difficulty measuring sandpack due to volume of water and collapse. sand bridged, top was measured at 6.3mbg) 50mm PVC Slotted
	12	6							
	13	5							
	14	4							
	15	3							
	16	2							
	17	1							
	18	0							
	19	-1							
		-2				**GW173 Terminated at 13.7m**			

Borehole Record: GW174

Project: Priviledged and Confidential - Richmond
Location: Richmond NSW, Australia
Loc Comment:
Job No: 2301034c

Position: Easting: 293,795.96
Northing: 6,279,313.82
Elevation: 17.32(m)
Inclination:

Date Drilled: 26/02/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Joseph Unwin/Catriona Bisits

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
	0	17	GX174/0.4-0.5	CI		Clayey to silty CLAY (CI) : soft, medium plasticity, reddish brown(5yr/4/4), with fine grained sand, moist.	M		
	1	16	GX174/0.9-1.0	CI		Silty CLAY (CI) : firm to stiff, medium plasticity, brownish yellow(10yr/6/6), with fine grained sand, dry.	D		
	2	15	GX174/1.4-1.5	CL		Silty CLAY (CL) : firm, low plasticity, yellow(10yr/7/8), with fine grained sand, dry.			
	3	14		CI		Sandy CLAY (CI) : soft, medium plasticity, brownish yellow(10yr/6/6), fine to medium grained sand, with medium plasticity silt, slightly moist.	SLM		Cement
	4	13							
	5	12							50mm PVC Solid
	6	11						Between 6.50-7.50 m, gravels/cobbles	
	7	10							
	8	9		CI		Silty CLAY (CI) : soft, medium plasticity, yellowish brown(10yr/5/6), trace fine grained sand, slightly moist to dry.	SLM-D		
	9	8							Bentonite

Borehole Record: GW174

Project: Priviledged and Confidential - Richmond
Location: Richmond NSW, Australia
Loc Comment:
Job No: 2301034c

Position: Easting: 293,795.96
Northing: 6,279,313.82
Elevation: 17.32(m)
Inclination:

Date Drilled: 26/02/2024
Drill Rig Canter Truck
Drill Supplier Fico Group Pty Ltd
Logged/Checked: Joseph Unwin/Catriona Bisits

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks: Observations / Comments	Well Diagram
▼	11	6		CI		Silty CLAY (CI) : soft, medium plasticity, yellowish brown(10yr/5/6), trace fine grained sand, slightly moist to dry.	SLM-D	drilling smoother, wet on augers from around 12.5-13	Bentonite; 50mm PVC Solid; sand pack; 50mm PVC Slotted; Collapse
▽	12	5							
	13	4							
	14	3							
	15	2				**GW174 Terminated at 14.5m**			
	16	1							
	17	0							
	18	-1							
	19	-2							

Borehole Record: GW175

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 294,532.72	**Date Drilled:** 27/02/2024
Location: Richmond NSW, Australia	Northing: 6,277,850.53	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.30(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	15.3		CL		Sandy CLAY (CL) : soft, low plasticity, dark grayish brown(10yr/4/2), fine to medium grained sand, trace fine sized gravel.			
	1	15	GX175/0.3-0.4	Cl		Silty CLAY (Cl) : firm, medium plasticity, brownish yellow(10yr/6/6), with fine grained sand, slightly moist to dry.	SLM-D		
	2	14	GX175/1.4-1.5	Cl		Sandy CLAY (CL) : soft, low plasticity, yellowish brown(10yr/5/4), fine grained sand, dry.	D		Cement
	3	13		CL					
	4	12		SC		Clayey SAND (SC) : yellowish brown(10yr/5/8), medium dense, fine to medium grained, slightly moist to dry.	SLM-D		
	5	11		Cl		Sandy CLAY (Cl) : soft, medium plasticity, dark yellowish brown(10yr/4/4), fine grained sand, slightly moist to dry.			
	6	10		SC		Clayey SAND (SC) : yellowish brown(10yr/5/6), medium dense, fine to medium grained, moist.	M		50mm PVC Solid
	7	9		SC		Clayey SAND (SC) : yellowish brown(10yr/5/8), loose, fine to medium grained, moist to slightly moist.	M-SLM		
	8	8		CL-Cl		Sandy CLAY (CL-Cl) : soft, low to medium plasticity, light yellowish brown(10yr/6/4), fine to medium grained sand, moist to slightly moist.			Bentonite
▼	9	7							sand pack (Difficulty getting tape measure down. Sand pack has bridged down the hole. Top measured at 8m.)
		6		Cl		Silty CLAY (Cl) : firm, medium plasticity, yellowish brown(10yr/5/4), trace fine to medium grained sand, slightly moist.	SLM		

Borehole Record: GW175

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 294,532.72	**Date Drilled:** 27/02/2024
Location: Richmond NSW, Australia	Northing: 6,277,850.53	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 15.30(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples: Soil Sample	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
▽	11 – 13	5.3 – 2		CI		Silty CLAY (CI) : firm, medium plasticity, yellowish brown(10yr/5/4), trace fine to medium grained sand, slightly moist.	SLM		50mm PVC Solid; sand pack (Difficulty getting tape measure down. Sand pack has bridged down the hole. Top measured at 8m.); 50mm PVC Slotted
	14 – 19	1 – -4				**GW175 Terminated at 13.5m**			

Borehole Record: GW176

Project: Priviledged and Confidential - Richmond	**Position:** Easting: 294,356.79	**Date Drilled:** 29/01/2024
Location: Richmond NSW, Australia	Northing: 6,276,943.47	**Drill Rig** Canter Truck
Loc Comment:	**Elevation:** 12.36(m)	**Drill Supplier** Fico Group Pty Ltd
Job No: 2301034c	**Inclination:**	**Logged/Checked:** Joseph Unwin/Catriona Bisits

General comments: Well top of casing (TOC) assumed 800mm above ground surface

Water	Depth (mbg)	Elevation (mAHD)	Samples	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
	0	12		CI		Silty CLAY (CI) : soft to firm, medium plasticity, dark grayish brown(10yr/4/2).			Cement
	1	11							
	2	10				**Clayey SILT soft, low to medium plasticity, yellowish red(5yr/5/6), slightly moist.**	SLM		50mm PVC Solid
	3	9							Bentonite
	4	8		CI		Silty CLAY (CI) : soft to firm, medium plasticity, yellowish red(5yr/5/6).			
	5	7							sand pack
▼	6	6		CI		Clayey to sandy CLAY (CI) : soft, medium plasticity, light reddish brown(5yr/6/4), fine grained sand, moist.	M		50mm PVC Slotted
▽	7	5							
	8								
	9	4				**GW176 Terminated at 8m**			
		3							

APPENDIX H

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW101

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 2301034
DATE OF INSTALLATION: 21/8/23	**INITIALS:** TM
DATE: 21/8/23	**WEATHER:**
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{12.375}{\text{Total depth (m)}} - \frac{9.8}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{15.468}{\text{Calculated Purge Volume}}\ \text{Litres}$$

including sludging

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		~9	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, PFAS free DI water added for de-silting, brown orange colour, opaque.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW10B2

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 23010034
DATE OF INSTALLATION: 21/8/23	INITIALS: STB
DATE: 22/8/23	WEATHER: Sunny.
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{13.598}{\text{Total depth (m)}} - \frac{12.445}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		10L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Purged dry, redish colour, lots of sediment. DI/PFAS free water added to desilt.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW103

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 2301034
DATE OF INSTALLATION: 23/8/23	**INITIALS:** SYB
DATE: 23/8/23	**WEATHER:** Cloudy
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{16.589}{\text{Total depth (m)}} - \frac{14.176}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{14.214}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1610							
TOTAL PURGE VOLUME (L):		21	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, red brown in colour, lots of sediment.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW103

PROJECT INFORMATION

PROJECT NAME:	23 Richmond	PROJECT NUMBER:	2301034 a
DATE OF INSTALLATION:		INITIALS:	JV
DATE:	6/3/24	WEATHER:	-0/cm
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{16.088}{\text{Total depth (m)}} - \frac{14.728}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{8.16}{\text{Calculated Purge Volume}} \text{ Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:48	15.620	8L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 16.513m after yellow brown, opaque, silt, lots of sand(1L), washed clips, weight, cap, new str.rg, HDPE Hydrosleeve installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW104

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 230103 4
DATE OF INSTALLATION: 24/8/23	INITIALS: SYB
DATE: 25/8/23	WEATHER: Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{14.402}{\text{Total depth (m)}} - \frac{12.105}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{13.782}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		15L	APPROX. PURGE RATE (LPM):		~0.5L/min		

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Drown colour, less sediment than other wells, no odour, opaque.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW105

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 2301034
DATE OF INSTALLATION: 24/8/23	**INITIALS:** SYB
DATE: 25/8/23	**WEATHER:** Foggy
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{13.315}{\text{Total depth (m)}} - \frac{10.581}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{16.404}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		17 L	**APPROX. PURGE RATE (LPM):**		0.3 L/min		

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) No odour, red brown colour, lots of sediment. 13.989 total depth following purging.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW106

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 2301034
DATE OF INSTALLATION: 24/8/23	**INITIALS:** SYB
DATE: 25/8/23	**WEATHER:** Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{13.450}{\text{Total depth (m)}} - \frac{10.511}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textit{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{17.634}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		25	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) SWL end - 12.321, TD - 13.552 brown-red colour, lots of sediment, no odour opaque.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW107

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 2301034
DATE OF INSTALLATION: 24/8/23	**INITIALS:** SYB
DATE: 25/8/23	**WEATHER:** Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{16.012}{\text{Total depth (m)}} - \frac{\cancel{12.961}\ 14.775\ \text{-IP malfunction}}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{7.422}{\text{Calculated Purge Volume}}\ Litres$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		4L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, PFAS free DI water added to de-silt, brown colour, opaque, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

Approx 1L of DI added, an additional 5L bailed, well recharging

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW1048

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034
DATE OF INSTALLATION: 28/8/23	INITIALS: SYB
DATE: 29/8/23	WEATHER: Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{14.109}{\text{Total depth (m)}} - \frac{12.015}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textit{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{12.564}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		14L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) brown orange colour, opaque, no odour, end TD - ~~14~~ TO 14.142

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW109

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	2301034
DATE OF INSTALLATION:	28/8/23	**INITIALS:**	SYB
DATE:	29/8/23	**WEATHER:**	Sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{15.570}{\text{Total depth (m)}} - \frac{13.944}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{9.756}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		12L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown colour, opage, no ~~do~~ odour, end depth - 15.610 mbTOC

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW110

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	23010134
DATE OF INSTALLATION:	29/8/23	**INITIALS:**	SYB
DATE:	30/8/23	**WEATHER:**	Sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{14.723}{\text{Total depth (m)}} - \frac{12.394}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{13.974}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		9L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, brown orange colour, no odour, opaque, minimal silt

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW111

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	2301034
DATE OF INSTALLATION:	29/08/23	**INITIALS:**	SYB
DATE:	30/08/23	**WEATHER:**	Sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{16.000}{\text{Total depth (m)}} - \frac{13.037}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{17.778}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) brown orange colour, opaque, lots DI water added while drilling, may impact SWL.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW112

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 23010 34
DATE OF INSTALLATION: 30/8/23	**INITIALS:** SYB
DATE: 31/8/23	**WEATHER:** Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{5.410}{\text{Total depth (m)}} - \frac{3.490}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{11.52}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		19L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orange colour, opaque, no odour, TD at end - 5.481

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW113

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	2301034
DATE OF INSTALLATION:	30/8/23	**INITIALS:**	SYB
DATE:	31/8/23	**WEATHER:**	Sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{14.433}{\text{Total depth (m)}} - \frac{12.299}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{12.804}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		5L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown/orange, opaque, bailed dry w no recharge after 20 min, TD - 14.462

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW114

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034
DATE OF INSTALLATION: 31/8/23	INITIALS: SYB
DATE: 31/8/23	WEATHER: Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{15.019}{Total\ depth\ (m)} - \frac{13.442}{Water\ level\ (m)}\right) \times \frac{3}{Well\ volumes} \times 2\frac{50\ mm}{Well}\ \textbf{or}\ 7.8\frac{100\ mm}{Well} = \frac{9.462}{Calculated\ Purge\ Volume}\ Litres$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		10L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, opaque, no odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW115

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034
DATE OF INSTALLATION: 31/8/23	INITIALS: SYB
DATE: 31/8/23	WEATHER: Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{13.060}{\text{Total depth (m)}} - \frac{11.290}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textbf{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{10.62}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		12L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, opaque, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW116

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 20/10/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.886	**TOTAL DEPTH (mBTOC) :** 16.978	**TIME:**
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

3 well volume = 24.104

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)

TOTAL PURGE VOLUME (L): 27L

APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown colour, opaque, brown sandy sed. Hydrasleeve deployed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

SWL at end - 15.506.

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW117

PROJECT INFORMATION

PROJECT NUMBER:	23010345	**INITIALS:**	JM
DATE:	30/10/23	**WEATHER:**	

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.257	**TOTAL DEPTH (mBTOC) :** 15.470m	**TIME:** 5:39pm
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

3x well volumes = 13L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)

TOTAL PURGE VOLUME (L): 13L **APPROX. SAMPLE PURGE RATE (LPM):** DTW 13.660 after purge

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) no odour, no sheen, brown silt, installed hydrasleeve

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW118

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 20/10/23	**WEATHER:** Sunny

~~SAMPLING~~ Purge METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.096	**TOTAL DEPTH (mBTOC) :** 14.981	**TIME:** 1331
DEPTH TO PSH (mBTOC): ~~14.981~~	**THICKNESS OF PSH (m):** —	

3 well volume - 16.994L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)

TOTAL PURGE VOLUME (L): 16L | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry. Brown, opaque, no odour/sheen. HS installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW119

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 20/10/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): ~~4.996~~ 3.996	**TOTAL DEPTH (mBTOC):** 5.957	**TIME:** 1421
DEPTH TO PSH (mBTOC): –	**THICKNESS OF PSH (m):** –	

3x Well volume = 11.559

1.961

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		4L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry. Brown colour/sediment, no odour/sheen. HS & installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW119

PROJECT INFORMATION

PROJECT NAME: ~~GWDT~~ Richmond	PROJECT NUMBER: 2301034b
DATE OF INSTALLATION:	INITIALS: JU
DATE: 8/3/24	WEATHER:
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{5.879}{\text{Total depth (m)}} - \frac{4.020}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{11.15}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:30	Dry	4L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Purged until dry, DTB 5.959 after, yellow brown, opaque, silt with lots (0.1L) sand, from base, washed d/s, weight, cap, new tag, no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW120

PROJECT INFORMATION

PROJECT NUMBER:	2301034	INITIALS:	JM
DATE:	24/10/23	WEATHER:	sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.59	TOTAL DEPTH (mBTOC): 15.93	TIME: 12:13pm
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

3 x well volumes = 12L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		5L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, no odour, no sheen, orange/brown silt, installed hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW120

PROJECT INFORMATION

PROJECT NUMBER:	**INITIALS:** RT
DATE: 22/01/24	**WEATHER:** Cloudy

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	**TOTAL DEPTH (mBTOC) :**	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Unable to sample because well has been knocked over. Well bgl appears intact, thread of bgl well PVC pipe intact

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

bgl PVC pipe broken. Removed hydrasleeve. Replaced cap. Water had strong odour, (fertiliser).

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW120

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2501034b
DATE OF INSTALLATION:	INITIALS: JL
DATE: 7/3/24	WEATHER: -2°
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{15.359}{\text{Total depth (m)}} - \frac{13.473}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{12}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
14:56	Dry	9L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) OTP 15.680m, purged til dry, grey brown initially becoming yellow brown after 3 litres, manure-like odour, no sheen, new string, washed clips, weight, cap. Installed HDPE hydrolock
↳ cap was not on when I arrived.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

Fixed cover prior to development

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW121

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** JM
DATE: 24/10/23	**WEATHER:** Sunny.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.8m (to gravel level)	**TOTAL DEPTH (mBTOC) :** 13.8m (to ground level)	**TIME:** 10:20am
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

3 well volumes = 11.78L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		4L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, silty brown/red sediments. No odour, no sheen. Installed hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW122

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** JM
DATE: 25/10/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.15m	**TOTAL DEPTH (mBTOC):** 14.35m	**TIME:** 9:30am
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

3x well volumes = 7L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		3L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, orange/brown silt at bottom but otherwise clear, no odour, no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

installed hydrasleeve.

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW123

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** JM
DATE: 25/10/23	**WEATHER:** sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.43m	**TOTAL DEPTH (mBTOC):** 15.73m	**TIME:** 8:45am
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

3x well volumes = 13.5L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		6L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) bailed dry, orange/brown silt, no odour, no sheen, installed hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW124

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: JM
DATE: 25/10/23	WEATHER: Sunny
SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑	

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 7.93	TOTAL DEPTH (mBTOC): 10.13m	TIME: 10:30am
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

3x well volumes 12L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:40	7.93	15L					
TOTAL PURGE VOLUME (L):		15L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Water level did not change, brown silty no odour, no sheen, installed hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW125

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** JM
DATE: 25/10/23	**WEATHER:** sunny
SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑	

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 6.68m	**TOTAL DEPTH (mBTOC) :** 9.18m	**TIME:** 4pm.
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		40L	APPROX. SAMPLE PURGE RATE (LPM):		water level did not move.		

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) brown silty, no odour, no sheen, purged out extra to ensure water added during well construction removed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ hydrasleeve installed. SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW126

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** JM
DATE: 31/10/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 15.020m	**TOTAL DEPTH (mBTOC) :** 17.800	**TIME:** 9.29am
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		6L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry. brown silty, no odour, no sheen, will bail dry one more time before install hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW126

PROJECT INFORMATION

PROJECT NUMBER: 23910345	INITIALS: JM
DATE: 31/10/23	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.967	TOTAL DEPTH (mBTOC): 17.80.	TIME: 4.42 pm
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

3 x well volume = 28 L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		28L	APPROX. SAMPLE PURGE RATE (LPM):		17.030 DTW at end		

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) brown silty, clear at top, no odour, no sheen, installed hydrasleeve

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW127

PROJECT INFORMATION

PROJECT NUMBER:	23010346	**INITIALS:**	JM
DATE:	3/10/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	12.949m	**TOTAL DEPTH (mBTOC) :**	17.8m.
DEPTH TO PSH (mBTOC):		**THICKNESS OF PSH (m):**	

TIME: 0.55pm

3x well volume = 25L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)

TOTAL PURGE VOLUME (L): 25L APPROX. SAMPLE PURGE RATE (LPM): DTW 13.160

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) brown silt, no odour, no sheen, installed hydrasleeve

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW128

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	JM
DATE:	1/11/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.536m	**TOTAL DEPTH (mBTOC):** 14.930m	**TIME:** 9:53am
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

3x well volumes = 14L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		9L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) bailed dry, brown silty, no odour, no sheen, installed hydrasleeve

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☑

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW1828

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301046
DATE OF INSTALLATION:	INITIALS: JV
DATE: 7/3/24	WEATHER: ~0°
PURGE METHOD: Baler	

PURGE VOLUME CALCULATION

$$\left(\frac{14.880}{\text{Total depth (m)}} - \frac{12.554}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{13.96}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:00	14.540	8L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 14.880, yellowish brown, silt and lots of sand (0.10L) purged until dry, no odour/sheen, opaque, HDPE hydrosleeve installed. new string, clips, weight, cap washed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW129

PROJECT INFORMATION

PROJECT NUMBER:	2390346	INITIALS:	JM
DATE:	1/11/23	WEATHER:	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.770	TOTAL DEPTH (mBTOC): 14.340	TIME: 3:54pm
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

3x well volumes = 9.2L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		5L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) brown silty, purged dry, no odour no sheen. Purge again tomorrow before install hydrasleeve

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☑

Purged additional 9L - SYB on 2/11/23

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW13&C

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	3/11/23	**WEATHER:**	Overcast.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	5.459	**TOTAL DEPTH (mBTOC) :**	5.840	**TIME:**	1207
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—		

3x well volume = 2.27

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		2.15L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, whitish grey colour, no sheen/odour, bailer left in for sampling

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW131

PROJECT INFORMATION

PROJECT NUMBER: ~~P~~ 2301034	INITIALS: SYB
DATE: 3/11/23	WEATHER: Overcast
SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐	

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 1.767	TOTAL DEPTH (mBTOC): 3.841	TIME: 11 13
DEPTH TO PSH (mBTOC): —	THICKNESS OF PSH (m): —	

3x well volume = 12.21

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		9L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, opaque, brown colour, minimal sed, no sheen/odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW131

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	2301034b
DATE OF INSTALLATION:		**INITIALS:**	JV
DATE:	7/3/24 10:40	**WEATHER:**	-2-
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{3.852}{\text{Total depth (m)}} - \frac{0.913}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textbf{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{17.6}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:05	Dry	10L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Purged dry after 10L, light yellow brown, ~~clear fast flow~~ no odour/sheen, opaque/cloudy, little sediment (no sand) HDPE Hydrosleeve installed. very good well condition. New string, washed chips, weight, cap.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW132

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	3/11/23	**WEATHER:**	Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	5.039	**TOTAL DEPTH (mBTOC) :**	5.315
DEPTH TO PSH (mBTOC):	-	**THICKNESS OF PSH (m):**	—

TIME: 11:39

3x well volume = 1.6 L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)

TOTAL PURGE VOLUME (L): ~1L | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) purged dry, BDI water added to desilt, TD-5.318, bailer left in well for sampling.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW133

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 3/11/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑ (Purge)

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.303	**TOTAL DEPTH (mBTOC):** 13.640	**TIME:** 1556
DEPTH TO PSH (mBTOC): –	**THICKNESS OF PSH (m):** –	

3x well volume: 7.9L

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		6	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, orange brown lots sed., no sheen/odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW134

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 3/11/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 9.991	**TOTAL DEPTH (mBTOC) :** 16.091	**TIME:** 15:11
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

3x well volume - 35.7

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		23L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, @TD - 16.101, orange brown, opaque, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW135

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	23/11/23	**WEATHER:**	Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	5.024	**TOTAL DEPTH (mBTOC) :**	15.554	**TIME:**	1509
DEPTH TO PSH (mBTOC):	F –	**THICKNESS OF PSH (m):**	–		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
		3 x well volume = 62.03L					
TOTAL PURGE VOLUME (L):		63L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) orange brown colour, lots of sed, v turbid, no sheen / odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW136

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	24/11/23	**WEATHER:**	overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	13.486	**TOTAL DEPTH (mBTOC) :**	14.281
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—

TIME: 14:14

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
		3x well volume = 4.683					
TOTAL PURGE VOLUME (L):		1.5 L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, orange brown colour, no odour/sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW136

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2801234b
DATE OF INSTALLATION:	INITIALS: JV
DATE: 7/3/24 11:20	WEATHER: Sun
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{14.269}{\text{Total depth (m)}} - \frac{13.525}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:30	Dry	1.5 L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Purged dry, cloudy yellow brown, no odour / sheen, washed dpt, weight, exp, new string. HDPE Lysimeter installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW137

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	23/11/23	**WEATHER:**	Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	3.761	**TOTAL DEPTH (mBTOC) :**	~~4.674~~	**TIME:**	1305
DEPTH TO PSH (mBTOC):	~~4.674~~	**THICKNESS OF PSH (m):**	—		

3 x well volume = 5.378

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		2.3L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, greyish orange brown, opaque, no sheen/odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW137

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	2301034 b
DATE OF INSTALLATION:		INITIALS:	JV
DATE:	7/3/24	WEATHER:	-o-
PURGE METHOD:	11:55		

PURGE VOLUME CALCULATION

$$\left(\frac{4.689}{\text{Total depth (m)}} - \frac{3.292}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{8.382}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:00	Dry	6 L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Purged dry, light yellowish brown, cloudy/gaogue, little sediment, no sand, v.good well condition, HDPE hydrosleeve installed. new string, washed clips, weight, cap.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW138

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	23/11/23	**WEATHER:**	over cast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	Dry	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1352
DEPTH TO PSH (mBTOC):		**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) No water in well.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW138

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	23/11/23	**WEATHER:**	Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : Dry	**TOTAL DEPTH (mBTOC) :** ~12.5m	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW138

PROJECT INFORMATION

PROJECT NAME:	PROJECT NUMBER: 24010346
DATE OF INSTALLATION: ~~22.1.24~~	INITIALS: RT
DATE: 22.1.24	WEATHER: Cloudy
PURGE METHOD:	

PURGE VOLUME CALCULATION

$$\left(\frac{12.801}{\text{Total depth (m)}} - \frac{12.423}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{\quad}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Well condition good, orange tinge water, clear, No odour, No sheen. 100mm retrieved with Bayler.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW139

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	24/11/23	**WEATHER:**	Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	12.765	**TOTAL DEPTH (mBTOC) :**	14.841	**TIME:**	1223
DEPTH TO PSH (mBTOC):	–	**THICKNESS OF PSH (m):**	–		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
	3 × well volume = 8.694L						
TOTAL PURGE VOLUME (L):		9L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown colour, v. turbid, min. sed., no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW140

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 24/11/23	**WEATHER:** Sunny

SAMPLING METHOD: Purged LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.390	**TOTAL DEPTH (mBTOC):** 14.022	**TIME:** 1641
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
		3x well volume =			9.613		
TOTAL PURGE VOLUME (L):		11.5L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) lots orange brown sed, turbid, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW141

PROJECT INFORMATION

PROJECT NUMBER: 23C1034	**INITIALS:** SYB
DATE: 27/11/23	**WEATHER:** sunny

Purge

~~SAMPLING~~ **METHOD:** LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.326	**TOTAL DEPTH (mBTOC):** 15.180	**TIME:** 1234
DEPTH TO PSH (mBTOC): 15.180 —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
	3x well volume = 10.92 L						
TOTAL PURGE VOLUME (L):		14L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orang colour, lots sed., opaque, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW142

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 28/11/23	**WEATHER:** Overcast

SAMPLING METHOD: Purging — LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.117	**TOTAL DEPTH (mBTOC):** 14.425	**TIME:** 7:53
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
		3x well volume =			7.705L		
TOTAL PURGE VOLUME (L):		4.5L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, orange brown colour, opaque, no sheen/odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW142

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034b
DATE OF INSTALLATION:	INITIALS: JU
DATE: ~~6~~ 7/3/24	WEATHER: -ò-
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{14.609}{\text{Total depth (m)}} - \frac{13.292\ (\text{hydroSleeve}_3\ \text{out})}{\text{Water level (m)}}\right) \times \frac{}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{8}{\text{Calculated Purge Volume}}\ Litres$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
09:58	14.384	8L until dry					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Replacing LDPE HydroSleeve (with only 300mm water in) with HDPE hydroSleeve, DTB 14.757m, yellow brown, opaque. Silt and lots of Sand (0.25L), clips, caps, weights washed

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW143

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	28/11/23	**WEATHER:**	Raining

SAMPLING METHOD: Purging — LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	13.989	**TOTAL DEPTH (mBTOC) :**	14.651	**TIME:**	1318
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
		3x well volume = 3.8995					

TOTAL PURGE VOLUME (L): 2L — APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Purged dry, lots seel, v. turbid, orange brown colour, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW144

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	29/11/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	8.970m	**TOTAL DEPTH (mBTOC) :**	10.598
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—

TIME: 11:09am

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
	3 x Well Volume = 9.59L						
TOTAL PURGE VOLUME (L):		7	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry at 7L. DI water added to desilt, orange brown colour, no lots sed., no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW145

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: WS
DATE: 30/11/2023	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 7.437	TOTAL DEPTH (mBTOC): 12.40	TIME: 10:35am
DEPTH TO PSH (mBTOC): —	THICKNESS OF PSH (m): —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
	3 x Well Volume =				29.23 L		
TOTAL PURGE VOLUME (L):		30L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange-Brown colour, lots of Sediment no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW146

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	WS / SYB
DATE:	30/11/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	7.844	**TOTAL DEPTH (mBTOC) :**	9.286
DEPTH TO PSH (mBTOC):		**THICKNESS OF PSH (m):**	

TIME: 1:03pm

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
	3x Well Volume =			8.518L			
TOTAL PURGE VOLUME (L):		9L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange Brown colour, very turbid, some sediment no sheen / odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW146

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	2201046
DATE OF INSTALLATION:		INITIALS:	JV
DATE:	6/3/21	WEATHER:	~2~
PURGE METHOD:			

PURGE VOLUME CALCULATION

$$\left(\frac{8.813}{\text{Total depth (m)}} - \frac{7.914}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{5.39}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
16:22	7.928	10L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 8.545 after,

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW147

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	01/12/23	**WEATHER:**	Sunny

SAMPLING METHOD: Purge — LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	13.616	**TOTAL DEPTH (mBTOC) :**	15.737	**TIME:**	0838
DEPTH TO PSH (mBTOC):	–	**THICKNESS OF PSH (m):**	–		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
	3 x well volume =	12.494					
TOTAL PURGE VOLUME (L):		7L	APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, incr. seal with purge time, orange brown colour, turbid, no sheen/odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW148

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	1/12/23	**WEATHER:**	overcast

SAMPLING METHOD: Purging LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	13.295	**TOTAL DEPTH (mBTOC) :**	15.666	**TIME:**	1240
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
	3× well volume = 13.966 L						
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW149

PROJECT INFORMATION

PROJECT NAME: ~~2301034~~ Richmond	PROJECT NUMBER: 2301034
DATE OF INSTALLATION:	INITIALS: JV
DATE: 12 12 23	WEATHER: -0°
PURGE METHOD:	

PURGE VOLUME CALCULATION

$$\left(\frac{9.580}{\text{Total depth (m)}} - \frac{7.750}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{ell}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{10.98}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		12	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opague, orangish brown, no odour/sheen, hydrosleeve deployed, some sediment

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW150

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	2301034
DATE OF INSTALLATION:	7/12/23	**INITIALS:**	SYB
DATE:	11/12/23	**WEATHER:**	Sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{10.265}{\text{Total depth (m)}} - \frac{7.598}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{16.002}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		23	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) TD at end of purging - 10.981 orange brown lots sed, may need to bring Waiteva tubing to remove more sed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW151

PROJECT INFORMATION

PROJECT NAME:	**PROJECT NUMBER:** 23010346
DATE OF INSTALLATION:	**INITIALS:** RT
DATE: 22/01/24	**WEATHER:** Cloudy
PURGE METHOD: Bayler Method.	

PURGE VOLUME CALCULATION

$$\left(\frac{15.801}{\text{Total depth (m)}} - \frac{12.262}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{21.234}{\text{Calculated Purge Volume}}\ \text{Litres}$$

3.539 x 3 x 2 x 50

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		12L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) ~12 L Purged, Well condition good. Open cap when inspected, ~~instructed~~ with sleeve in place, instructed to reestablish with new sleeve. brown tinge, clear, no odor, No sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW151

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	2301034
DATE OF INSTALLATION:	7/12/23	**INITIALS:**	SYB
DATE:	11/12/23	**WEATHER:**	Sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{15.589}{\text{Total depth (m)}} - \frac{12.236}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ or\ 7.8\frac{100\ mm}{\text{Well}} = \frac{19.998}{\text{Calculated Purge Volume}}\ Litres$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		7	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Bailed dry, lots sed, DI water added to clear out screen. orange brown colour, v. turbid, no odour / sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW151

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2201034b
DATE OF INSTALLATION:	INITIALS: JU
DATE: 6/3/24 14:00	WEATHER: - O;
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{15.598}{\text{Total depth (m)}} - \frac{12.222}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{2l}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
14:17	~~*~~15.429	7L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 15.598m after, Sulphur/stagnant odour, Soapy lather seen in one bailer load, yellow brown, silt and ~~fine~~ mod. sand, HDPE hydrosleeve replaced New string, washed cap, clips, weight

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: MW52

PROJECT INFORMATION

PROJECT NAME: 2301034b	**PROJECT NUMBER:**
DATE OF INSTALLATION: 15/12/23	**INITIALS:** JV / SB
DATE: 15/12/23	**WEATHER:** :O-
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{10.833}{\text{Total depth (m)}} - \frac{8.635}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{13.188}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
16:00							
TOTAL PURGE VOLUME (L):		2L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 2L bailed dry, dark brown orange, very turb., lots of sediment, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW153

PROJECT INFORMATION

PROJECT NAME: 2301034b	**PROJECT NUMBER:**
DATE OF INSTALLATION: 8/1/24	**INITIALS:** JM
DATE: 6/1/24	**WEATHER:** ~~Sun~~ raining
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{16.80}{\text{Total depth (m)}} - \frac{11.760}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{30'}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1.39p.m.							
TOTAL PURGE VOLUME (L):		25L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) orange brown silt, Bailed dry

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW 154.

PROJECT INFORMATION

PROJECT NAME: WSYD VN1	**PROJECT NUMBER:** 23010346
DATE OF INSTALLATION:	**INITIALS:** RT
DATE: 23/01/24	**WEATHER:** Overcast
PURGE METHOD: Bayler	

PURGE VOLUME CALCULATION

$$\left(\frac{5.638}{\text{Total depth (m)}} - \frac{N/A}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{N/A}{\text{Calculated Purge Volume}} \text{ Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Well completely dry, dry silty clay on bottom of Water Indicator.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW155

PROJECT INFORMATION

PROJECT NAME: 23010346	**PROJECT NUMBER:**
DATE OF INSTALLATION: 9.1.24	**INITIALS:** JV/JM
DATE: 9.1.24	**WEATHER:** -ø-
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{15.439}{Total\ depth\ (m)} - \frac{14.111}{Water\ level\ (m)}\right) \times \frac{3}{Well\ volumes} \times 2\frac{50\ mm}{Well}\ \textbf{or}\ 7.8\frac{100\ mm}{Well} = \frac{7.968}{Calculated\ Purge\ Volume}\ Litres$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:00	14.111						
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 5L bailed, brown, opaque, sand/silt, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW156

NOT DEVELOPED as of 15/1/24

PROJECT INFORMATION

PROJECT NAME: 23010346	**PROJECT NUMBER:**
DATE OF INSTALLATION: 9.1.23	**INITIALS:** JU/JM
DATE: 9.1.23	**WEATHER:** cloudy / rain
PURGE METHOD: bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{12.52}{\text{Total depth (m)}} - \frac{9.69}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{17}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

Ran out of PFAS string

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW156

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034
DATE OF INSTALLATION:	INITIALS: JM
DATE: 17/1/24	WEATHER: raining
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{}{\text{Total depth (m)}} - \frac{}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
3:30pm		25L					
TOTAL PURGE VOLUME (L):		25L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) NO IP, unable to measure DTW, orange silty, bailed dry, installed hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW156

PROJECT INFORMATION

PROJECT NAME: 23 Richmond	PROJECT NUMBER: 23010346
DATE OF INSTALLATION:	INITIALS: JV
DATE: 6/3/24	WEATHER: -o-
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{12.529}{\text{Total depth (m)}} - \frac{9.826}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{16.218}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15:17	11.836	19L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 12.529, Purged 19L, yellow brown, s.lt, minor san

no odour/sheen, HDPE hydrosleeve installed

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW157

PROJECT INFORMATION

PROJECT NAME:	230103465	**PROJECT NUMBER:**	
DATE OF INSTALLATION:	10 / 1 / 24	**INITIALS:**	JV
DATE:	10 / 1 / 24	**WEATHER:**	Sunny
PURGE METHOD:	bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{16.680}{\text{Total depth (m)}} - \frac{12.651}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{24.174}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15:00	12.651						
after bailing	16.50						
TOTAL PURGE VOLUME (L):		12L	**APPROX. PURGE RATE (LPM):**				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 12L bailed out until dry. Very sandy sediment. No odour/sheen. Opaque, brown

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW158

PROJECT INFORMATION

PROJECT NAME: WSYD WN1	**PROJECT NUMBER:** 23010346.
DATE OF INSTALLATION:	**INITIALS:** RS
DATE: 25/01/24	**WEATHER:** Overcast .
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{15.000}{\text{Total depth (m)}} - \frac{12.852}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{12.888}{\text{Calculated Purge Volume}}\ \text{Litres}$$

2.148

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		18L	**APPROX. PURGE RATE (LPM):**				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) orange tinge ~~Redeveloped~~ and pulled out extra as static had filled with water and had come back to reset it; installed hydrasleeve. after purged ~ 18L

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW158

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 23010746
DATE OF INSTALLATION:	INITIALS: JV
DATE: 6/3/24 13:00	WEATHER: ~0~
PURGE METHOD:	

PURGE VOLUME CALCULATION

$$\left(\frac{12.850 \leftrightarrow}{\text{Total depth (m)}} - \frac{14.537\ (\text{no in sleeve})}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{Well}\ \textbf{or}\ 7.8\frac{100\ mm}{Well} = \frac{}{\text{Calculated Purge Volume}}\ Litres$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:18	12.904	NIL					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 14.299m after replacing HDPE sleeve, yellow brown, silt, lots of sand towards end of purging.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW159

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	230103Hb
DATE OF INSTALLATION:		INITIALS:	JM
DATE:	17/1/24	WEATHER:	Raining
PURGE METHOD:	bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{}{\text{Total depth (m)}} - \frac{}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
4.20pm		8L					
* Some water had collected in the gatic, tried to remove but some went down the well before developing.							
TOTAL PURGE VOLUME (L):		8L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) no IP. could not measure DTW, orange silty bailed dry. ~~Some~~ Installed hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW160

PROJECT INFORMATION

PROJECT NAME: 23010346	**PROJECT NUMBER:**
DATE OF INSTALLATION: 12 / 12 / 24	**INITIALS:** JC
DATE: 12 / 12 / 24	**WEATHER:** 20°
PURGE METHOD: bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{15.891}{\text{Total depth (m)}} - \frac{13.735}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textbf{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{11.2}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12.25	13.735						
12.30	Dry						
TOTAL PURGE VOLUME (L):		4.5L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, brown, no odour/sheen, lots sand/silt, 4.5L purged/bailed until dry. Sleeve installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW161

PROJECT INFORMATION

PROJECT NAME: WS4D	**PROJECT NUMBER:** 23010346
DATE OF INSTALLATION:	**INITIALS:** RT
DATE: 22/01/24	**WEATHER:** CLOUDY
PURGE METHOD: Bayler.	

PURGE VOLUME CALCULATION

$$\left(\frac{16.023}{\text{Total depth (m)}} - \frac{13.068}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textbf{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{17.73}{\text{Calculated Purge Volume}}\,\text{Litres}$$

2.955 — 17.73

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		7L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) orange silt, no odour, no sheen, bailed dry, hydrasleeve installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☑

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW161

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2201034b
DATE OF INSTALLATION:	INITIALS: JV
DATE: 6/3/24 10:27	WEATHER: ~0 C
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{16.039}{\text{Total depth (m)}} - \frac{13.785}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{13.5}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:16	13.265	16					
TOTAL PURGE VOLUME (L):		APPROX. PURGE RATE (LPM):					

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 16.020m after, yellow brown, opaque, no odour / sheen, silt and minor sand. HDPE hydrosleeve installed

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

HDPE Hydrosleeve in already, but replaced with new one.

ORIGINAL FIELD RECORD

Geo-Logix

well development log ~~GROUNDWATER SAMPLE LOG~~

WELL ID GW62

PROJECT INFORMATION

PROJECT NUMBER: 2301034b	**INITIALS:**
DATE:	**WEATHER:** cloudy, showers

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 11.096	**TOTAL DEPTH (mBTOC) :** 13.892	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) lots of sediment, opaque, brown

25 bailers purged, did not run dry

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW162

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 23010345
DATE OF INSTALLATION:	**INITIALS:** JV
DATE: 6/3/24 12:00	**WEATHER:** -0-
PURGE METHOD:	

PURGE VOLUME CALCULATION

$$\left(\frac{13.532}{\text{Total depth (m)}} - \frac{11.359\ (\text{with hydrosleeve})}{\text{Water level (m)}}\right) \times \frac{3\ (\text{m})}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{13}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:13	11.694	15L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Replace existing HDPE hydrosleeve, DTB 13.175m after, yellow brown, opaque, no odour/sheen, HDPE hydrosleeve installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

hydrosleeve struggling go down, I believe it is at the bottom.

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW163

PROJECT INFORMATION

PROJECT NAME: Ngyal ONi	**PROJECT NUMBER:** 23010346
DATE OF INSTALLATION: 23/01/24?	**INITIALS:** RT
DATE: 23/01/24	**WEATHER:** Overcast
PURGE METHOD: Bayler	

PURGE VOLUME CALCULATION

$$\left(\frac{5.043}{\text{Total depth (m)}} - \frac{4.732}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{1.866}{\text{Calculated Purge Volume}}\ \text{Litres}$$

0.311

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		N 500mL	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) good, brown tinge, suspension of silt in water, No odour, No sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: CW163

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	2301034 b
DATE OF INSTALLATION:		INITIALS:	JH
DATE:	8/3/24 8:16 → 09:20	WEATHER:	-0-
PURGE METHOD:	Bailer ✓		

PURGE VOLUME CALCULATION

$$\left(\frac{4.936}{\text{Total depth (m)}} - \frac{2.366}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{16}{\text{Calculated Purge Volume}} \text{ Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
01:50	Dry	8.5L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) HDPE ~~Hydrosleeve already installed~~ ← True, but swapped anyway

Purged 8.5L until dry, new string, cleaned clips, cap, weight.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW164

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 23010346
DATE OF INSTALLATION:	INITIALS: JM
DATE: 22-1-24	WEATHER: Sunny
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{9.560}{\text{Total depth (m)}} - \frac{8.515}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{6.27}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
9:40am.							
TOTAL PURGE VOLUME (L):		13L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) V silty, orange, no odour, no sheen.
Added 2L DI water (PFAS safe) to de-silt. DTW after bailing 13L 8.870m Total Depth 9.630.

RECHARGE BEHAVIOUR: FAST RECHARGING ☑ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW164

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	2301034 C
DATE OF INSTALLATION:		INITIALS:	JV
DATE:	08:42 05/03/2024	WEATHER:	- O -
PURGE METHOD:	bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{9.528}{\text{Total depth (m)}} - \frac{6.543}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{6}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
~~17:05~~	~~Dry~~	~~8 L~~					
09:03	8.58	10 L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 9.530 after replacing LDPE Hydrosleeve, weight, clip, cap washed, yellow brown, silt, no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW165

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034
DATE OF INSTALLATION:	INITIALS: JU
DATE: 5/3/24	WEATHER: ~0~
PURGE METHOD:	

PURGE VOLUME CALCULATION

$$\left(\frac{10.728}{\text{Total depth (m)}} - \frac{10.471}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{\S 1.6}{\text{Calculated Purge Volume}} \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
14:54		10L					
15:13	13.050	20L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) after 10L, DTB 13.550m, poured in 1L of DI water.
after 20L, DTB 13.552. yellow brown, no odour/sheen
lots of sand in bucket after purging. Hydrosleeve installed.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW166

PROJECT INFORMATION

PROJECT NAME: Richmond	**PROJECT NUMBER:** 2301034c
DATE OF INSTALLATION:	**INITIALS:** JV
DATE: 5/3/24	**WEATHER:** ~0°
PURGE METHOD: Baler	

PURGE VOLUME CALCULATION

$$\left(\frac{6.595}{\text{Total depth (m)}} - \frac{3.138}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{20.7}{\text{Calculated Purge Volume}} \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15:49	6.448	18L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 18L purged until dry, DTB 6.598m, fine base. yellow brown, opaque, cloudy at end, stagnant odour, no sheen HDPE Hydrosleeve installed

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

Odour

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW167

PROJECT INFORMATION

PROJECT NAME: Kilmond	PROJECT NUMBER: 2801034
DATE OF INSTALLATION:	INITIALS: JU
DATE: 5/3/24	WEATHER: ~ 0.
PURGE METHOD:	

PURGE VOLUME CALCULATION

$$\left(\frac{8.210}{\text{Total depth (m)}} - \frac{7.407}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textbf{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{5}{\text{Calculated Purge Volume}} \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
14:11	7.674	10L					
	↓						
	recharging						
	quickly						
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 9.145m after development, yellow brown, opaque, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW168

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	2301034c
DATE OF INSTALLATION:		INITIALS:	JV
DATE:	5/3/24	WEATHER:	-0 C
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{7\text{8}.877}{\text{Total depth (m)}} - \frac{7.315}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{}{\text{Calculated Purge Volume}} \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
17:05	Dry	8L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) DTB 8.778, purged 8L until dry, yellow brown, opaque, added 1L DI water (2L) woodour / silty for de-silting, initially coming out as slurry

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW170

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	2301034 c
DATE OF INSTALLATION:		INITIALS:	JU
DATE:	5/3/24	WEATHER:	-0-
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{11.245}{\text{Total depth (m)}} - \frac{6.437}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textbf{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{28.9}{\text{Calculated Purge Volume}} \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:57	Dry	22L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 22L purged til dry, silty brown, opaque, no odor/sheen

HDPE hydrosleeve installed, former base after development.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW171

PROJECT INFORMATION

PROJECT NAME:	2301034C	PROJECT NUMBER:	Richmond
DATE OF INSTALLATION:	25 3 24	INITIALS:	JV
DATE:	25 3 24	WEATHER:	-0:
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{11.109}{\text{Total depth (m)}} - \frac{5.352}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{34}{\text{Calculated Purge Volume}} \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:00		36					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Sediment rich, opaque, yellow brown, DTW 7.315m after purging HDPE hydrosleeve installed at base.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW172

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	230134c
DATE OF INSTALLATION:	29/1/24	**INITIALS:**	JM
DATE:	29/1/24	**WEATHER:**	sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{9.640}{\text{Total depth (m)}} - \frac{8.840}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}}\ \textit{or}\ 7.8\frac{100\,mm}{\text{Well}} = \frac{5}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:30am		5L					
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Visibly bailed dry.

Installed hydrasleeve. (HDPE)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☑

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW13

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034c
DATE OF INSTALLATION:	INITIALS: DU
DATE: 6/3/24	WEATHER: -0C
PURGE METHOD: Bail	

PURGE VOLUME CALCULATION

$$\left(\frac{11.770}{\text{Total depth (m)}} - \frac{8.789}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{17.9}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:15	10.065						
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Purged 20L, yellow brown, opaque, no odour/sheen, lather seen again, unlikely to be detergent from me, possibly plastic from cut pipe? HDPE Hydrosleeve installed

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW174

PROJECT INFORMATION

PROJECT NAME: Richmond	PROJECT NUMBER: 2301034C
DATE OF INSTALLATION:	INITIALS: JV
DATE: 5/3/24	WEATHER: -0-
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{14.348}{\text{Total depth (m)}} - \frac{9.574}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\,mm}{\text{Well}} \textbf{ or } 7.8\frac{100\,mm}{\text{Well}} = \frac{28.6}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:16	14.113						
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 29L purged, opaque, silt/sand rich, no odour/sheen, yellow brown
Soapy lather after 5L purged, swapped down and string, gone after 15L purged.
HPPE Hydrosleeve installed

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW175

PROJECT INFORMATION

PROJECT NAME:	Richmond	**PROJECT NUMBER:**	2301034c
DATE OF INSTALLATION:	26/2/24	**INITIALS:**	JM
DATE:	26/2/24	**WEATHER:**	cloudy
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{14.40}{\text{Total depth (m)}} - \frac{8.480}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{35}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1.22p.m							
TOTAL PURGE VOLUME (L):		7L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) very silty, lot sediment. orange brown. bailed dry. Installed HDPE hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

WELL DEVELOPMENT LOG

WELL ID: GW176

PROJECT INFORMATION

PROJECT NAME:	Richmond	PROJECT NUMBER:	2301034c
DATE OF INSTALLATION:	24/1/24	INITIALS:	JM
DATE:	24/1/24	WEATHER:	Sunny
PURGE METHOD:	Bailer		

PURGE VOLUME CALCULATION

$$\left(\frac{8.910}{\text{Total depth (m)}} - \frac{5.920}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}} \textbf{ or } 7.8\frac{100\ mm}{\text{Well}} = \frac{18\text{L}}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		13L	APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) orange silty, bailed dry installed hydrasleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☑

ORIGINAL FIELD RECORD

APPENDIX I

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW101

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/9	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 10.571	**TOTAL DEPTH (mBTOC) :** 12.085	**TIME:** 0753 - Hin.
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1235	10.626	~0.5L	5.81	0.502	251.4	5.40	20.7
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown colour, opaque, sediment.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW101	**SAMPLE ID:** DS1	**SAMPLE ID:** TS1
SAMPLE TIME: 12:30	**SAMPLE TIME:** 1230	**SAMPLE TIME:** 1230
NO. CONTAINERS: 1	**NO. CONTAINERS** 1	**NO. CONTAINERS** 1xPFAS
ANALYSIS: PFAS	**ANALYSIS:** PFAS	**ANALYSIS:** PFAS

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW102

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/9/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 2.536	**TOTAL DEPTH (mBTOC) :** 3.579	**TIME:** 11:11 - HS in.
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1555	2.548	0.2	6.07	0.004	230.3	6.50	21.6
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orange colour, opaque, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW102	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1553	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW103

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/9/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	14.262	**TOTAL DEPTH (mBTOC) :**	16.103
DEPTH TO PSH (mBTOC):	~~+6.103~~ –	**THICKNESS OF PSH (m):**	–

TIME: 08:43 - H. in.

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:20	14.264	~0.5	4.88	0.65	266.1	4.52	21.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Slightly opaque, orange brown colour, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW103	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 13:17	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW103

PROJECT INFORMATION

PROJECT NUMBER:	2301034a	**INITIALS:**	JV
DATE:	2 4 24	**WEATHER:**	-0-

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	14.602	**TOTAL DEPTH (mBTOC) :**	**TIME:** 16:57
DEPTH TO PSH (mBTOC):		**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
17:06			5.10	405.2	270.4	—	21.3
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Sample slightly cloudy, pale yellow, no odour/no sheen,

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW103	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 17:00	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW104

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: SYB
DATE: 13/9/23	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.179	TOTAL DEPTH (mBTOC): 14.403	TIME: 08:25 - H.in.
DEPTH TO PSH (mBTOC): —	THICKNESS OF PSH (m): —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1253	12.246	~0.5	6.54	0.58	257.1	3.95 ~~10.24~~	19.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown colour, opaque, no odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW104	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 12:50	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW105

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/9	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 11.432	**TOTAL DEPTH (mBTOC):** 13.942	**TIME:** 11:00 - HS In.
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1531	11.439	~0.5L	5.49	0.295	271.5	4.36	20.7

TOTAL PURGE VOLUME (L): | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW105	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 15:28	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW106

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/9/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 10.553	**TOTAL DEPTH (mBTOC):** 13.525	**TIME:** 11:34
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1720	10.572	0.5	5.29	1.02	201.4	4.358	18.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange Brown, opaque, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW106	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 17 18	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW107

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/9/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.213	**TOTAL DEPTH (mBTOC):** 15.355	**TIME:** 11:43
DEPTH TO PSH (mBTOC): ~	**THICKNESS OF PSH (m):** ~	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1654	13.229	~0.5	5.82	1.04	5.36	109.7	19.3
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW107	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 16:51	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 2x125mL	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW108

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/9/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	12.061	**TOTAL DEPTH (mBTOC) :**	13.884
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—

TIME: 1200

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1641	12.052	~0.5L	5.08	0.371	245.6	5.48	19.7

TOTAL PURGE VOLUME (L): | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW108	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 16:39	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW109

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/9/23	**WEATHER:**	Sunny.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	13.946	**TOTAL DEPTH (mBTOC) :**	15.561	**TIME:**	12:15
DEPTH TO PSH (mBTOC):	–	**THICKNESS OF PSH (m):**	–		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
16:21	13.952	0.5	6.02	4.47	5.89	142.1	20.1
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW109	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 16:19	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW110

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/09/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	12.535	**TOTAL DEPTH (mBTOC) :**	14.478	**TIME:** 10:02 - H. in
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1426	12.532	~0.5L	5.59	5.91	242.4	5.34	19.8
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW110	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 14.25	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW111

PROJECT INFORMATION

PROJECT NUMBER: ~~GWHH~~ 2301034		**INITIALS:** SYB	
DATE: 13/9/23		**WEATHER:** Sunny	
SAMPLING METHOD:	LOW FLOW: ☐	HYDRASLEEVE: ☑	BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 14.225	**TOTAL DEPTH (mBTOC) :** 16.169	**TIME:** 09:46 - H.in.
DEPTH TO PSH (mBTOC): –	**THICKNESS OF PSH (m):** –	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1410	14.231	~0.5L	5.72	0.371	249.6	3.09	20.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orange in colour, opaque, no odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW111	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1406	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW112

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/09/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	3.564	**TOTAL DEPTH (mBTOC) :**	5.442
DEPTH TO PSH (mBTOC):	~~5.442~~ —	**THICKNESS OF PSH (m):**	—

TIME: 09:25 - H. in

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1356	3.567	~05	5.82	0.258	259.2	2.93	18.0
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Drange braun, opaque, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW112	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1353	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW113

PROJECT INFORMATION

PROJECT NUMBER: 2306034	**INITIALS:** SYB
DATE: 13/9/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 11.403	**TOTAL DEPTH (mBTOC):** 14.511	**TIME:** 08:58-H.in.
DEPTH TO PSH (mBTOC): ~~14.511~~ —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1341	11.521	~1.0L	5.91	0.91	260.5	4.22	20.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, orange brown colour, less sed. than previous wells

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW113	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 13:39	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW114

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/09/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	13.505	**TOTAL DEPTH (mBTOC) :**	15.009	**TIME:**	10:39 - HS in
DEPTH TO PSH (mBTOC):	–	**THICKNESS OF PSH (m):**	–		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1510	13.519	~0.3	6.38	3.18	270.3	5.32	20.4
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, opaque, moderate

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW114	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1508	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW115

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/9/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	11.619	**TOTAL DEPTH (mBTOC) :**	13.065
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—

TIME: 10:21 - 11.in

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1453	11.623	0.52	4.82	0.266	281.05.08		19.0
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW115	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1442	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW11G

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 10/11/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.892	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1240
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1244	–	–	6.50	~~143.0~~ 4.36	143.0	2.52	20.1
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, sed (brown/orange) at bottom of HS, no odour/sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW11G	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: PFAS 5	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: 1	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW117

PROJECT INFORMATION

PROJECT NUMBER: 23010340	INITIALS: SYB
DATE: 10/11/23	WEATHER: Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.335	TOTAL DEPTH (mBTOC):	TIME: 09:39
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
0941	—	—	6.03	12.32	224.4	4.36	21.4
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown colour, brown seal., no odour/sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW117	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 0941	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW118

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 10/11/23	**WEATHER:** Sunny.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 2.078	**TOTAL DEPTH (mBTOC):**	**TIME:** 10:46
DEPTH TO PSH (mBTOC): –	**THICKNESS OF PSH (m):** –	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1055	—		6.27	10.86	171.6	4.70	20.5
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orange colour, slightly opaque, no sheen / odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW118	**SAMPLE ID:** DGW1b	**SAMPLE ID:** TGW1b
SAMPLE TIME: 1054	**SAMPLE TIME:** 1054	**SAMPLE TIME:** 1054
NO. CONTAINERS: 1	**NO. CONTAINERS** 1	**NO. CONTAINERS** 1
ANALYSIS: PFAS	**ANALYSIS:** PFAS	**ANALYSIS:** PFAS

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW119

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 10/11/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 3.759	**TOTAL DEPTH (mBTOC):**	**TIME:** 11:10
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:13	—	—	4.80	0.73	220.4	5.77	18.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) B orange brown, opaque, no sed, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW119	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:11	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW119

PROJECT INFORMATION

PROJECT NUMBER: 2301034b	**INITIALS:** JV/CB
DATE: 21·3·24	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 4.396	**TOTAL DEPTH (mBTOC) :** 5.952	**TIME:** 10:30
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:39			5.54	458.4	69.6	4.34	20.1
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 33cm Cloudy, pale yellow.

sample bottle 80% full. Needed to collect extra for water properties w. bailer

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW119	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1x PB, not full	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW120

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	10/11/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	**TOTAL DEPTH (mBTOC) :**	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
well monument broken/pushed over, threaded on casing snapped-unable to be repaired onsite. well cap moved from broken casing in monument to that sticking up out of the ground. Monument put over it to stop any water infiltration.							
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW120

PROJECT INFORMATION

PROJECT NUMBER:	2301034B	**INITIALS:**	CB JH
DATE:	21/3/24	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.517	**TOTAL DEPTH (mBTOC) :** 15.761	**TIME:** 9:50
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
~~9:53~~			6.85	2539	-125.1	1.56	19.8
10:03							
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 500mm of water. Cloudy/opaque brown, no odour / no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW120	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: ~~1x~~ PFAS	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1x PFAS	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW121

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: SYB
DATE: 10/11/23	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.308	TOTAL DEPTH (mBTOC):	TIME: 1213
DEPTH TO PSH (mBTOC): –	THICKNESS OF PSH (m): –	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1218			6.93	6.92	163.0	3.57	21.8
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange colour, sediment, opaque no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW121	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 1216	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW122

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	10/11/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	12.780	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1133
DEPTH TO PSH (mBTOC):	–	**THICKNESS OF PSH (m):**	–

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1137			6.49	4.61	203.7	4.13	20.4
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, lots sed, opaque, no colour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW122	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:35	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW123

PROJECT INFORMATION

PROJECT NUMBER: ~~GW12~~ 2301034		**INITIALS:** SYB	
DATE: 10/11/23		**WEATHER:** Sunny	
SAMPLING METHOD:	LOW FLOW: ☐	HYDRASLEEVE: ☑	BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.459	**TOTAL DEPTH (mBTOC) :**	**TIME:** 13:11
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1312	—	—	6.37	3.40	166.2	2.91	21.0
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, ~~a~~ whitish sed, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW123	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1312	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW124

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 10/11/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 8.033	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1355
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1359	—		6.21	1.25	158.2	5.66	19.6
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, orange sed, no sheen/odour,

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW124	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1358	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW125

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/11/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 7.068	**TOTAL DEPTH (mBTOC) :**	**TIME:** 09:44
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
09:49		—	5.82	1.07	139.2	5.52	18.3
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown colour, lots of brown sed, no odour / sheen, opaque

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW125	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 09:48	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW126

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/11/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.015	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1528
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1530	——		5.43	2.36	214.7	2.61	20.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orange colour/ seel, opaque, no odour / sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW126	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1529	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW127

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/11/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.895	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1424
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1458			5.17	0.163721		3.97	20.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) HS stuck in well, broke off on clips, w fishhook, it broke too. Bailer utilised to get sample, orange brown, no odour / sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW127	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1457	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW128

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/11/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 2.533	**TOTAL DEPTH (mBTOC) :**	**TIME:** 12:01
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:03	—	—	5.60	0.489	162.7	2.29	19.5
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no seal, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW128	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 12:02	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW128

PROJECT INFORMATION

PROJECT NUMBER: 2301034b	**INITIALS:** JV
DATE: 22 5 24	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.573	**TOTAL DEPTH (mBTOC) :** 14.856	**TIME:** 11:30
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:35	—	—	5.77	438.7	67.4	1.15	19.3

TOTAL PURGE VOLUME (L): | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Pale yellow, cloudy, no odour / no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW128	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:37	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1×PB	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW129

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/11/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.572	**TOTAL DEPTH (mBTOC) :**	**TIME:** 11:27
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:32	—	—	528	5.60	193.3	2.95	19.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown colour, opaque, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW132	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:30	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW130

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/11/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 2.619	**TOTAL DEPTH (mBTOC) :**	**TIME:** 10:41
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:45	—	—	5.62	0.63	167.1	5.29	19.0
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Grey brown colour/ seed, opaque, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW130	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 10:44	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW131

PROJECT INFORMATION

PROJECT NUMBER: 23010134	**INITIALS:** SYB
DATE: 13/10/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 1.562	**TOTAL DEPTH (mBTOC) :**	**TIME:** 10:10
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:14		—	5.93	1.70	141.2	5.16	18.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW131	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 10:13	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW131

PROJECT INFORMATION

PROJECT NUMBER: 23010346	INITIALS: CB, JH
DATE: 21/3/24	WEATHER: PART CLOUDED

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 1.755	TOTAL DEPTH (mBTOC): 3.849	TIME: 15:45
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15:46			6.35	166	177.0	1.97	22.0
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Gatic cover full with sand, cap on tightly. Standing water measured after removal of sleeve, Nearly clear, faint yellow. as could not read.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

Good well condition! No odour no sheen

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW131	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1xPB	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW132

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/11/23	**WEATHER:**	Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 0.979	**TOTAL DEPTH (mBTOC) :**	**TIME:** 11:03
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:05			5.73	1.54	171.1	5.33	19.7
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown colour/ seal, opaque, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW132	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:04	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW133

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/10/23	**WEATHER:**

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 2.361	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1401
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1410	—	—	5.46	0.143	169.5	4.85	21.3
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) HS dt was getting stuck, wouldn't go below SWL, bailer used, orange brown colour, opaque, no odour, sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW133	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1409	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW134

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 13/11/23	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.296	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1341
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1345	—		5.77	0.362	168.0	1.90	20.3
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orange colour, lots seal, opaque, no odour/sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW134	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1344	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW135

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 9.813	**TOTAL DEPTH (mBTOC):** —	**TIME:** 9:22
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
9:50	—	—	6.77	2.15	56.5	4.38	19.8
Orange brown sed. opaque, no odour/sheen.							
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Hydrasleeve broke in well unable to be retrieved, bailer used to retrieve sample

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW135	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 9:40	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW136

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	11/12/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	13.501	**TOTAL DEPTH (mBTOC) :**		**TIME:**	11:36
DEPTH TO PSH (mBTOC):	–	**THICKNESS OF PSH (m):**	–		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:36		–	6.53	3.06	71.6	5.95	23.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) minimal water in HS, slight yellow colour, opaque, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW136	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:35	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW136

PROJECT INFORMATION

PROJECT NUMBER:	23010346	**INITIALS:**	CB, JH
DATE:	21/3/24	**WEATHER:**	SEMI-CLOUDED

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.654 *	**TOTAL DEPTH (mBTOC) :** 14.281	**TIME:** 15:05
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15.25			6.89	1569	160.0	3.36	20.3
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) * Standing water could only be measured with sleeve removed

20cm water in sleeve. Used this water and water from an additional sleeve to ~~test~~ sample

No odour / no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW136	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1 x PS	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW137

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	4/12/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	3.431	**TOTAL DEPTH (mBTOC) :**	4.680	**TIME:**	10:03
DEPTH TO PSH (mBTOC):	—	**THICKNESS OF PSH (m):**	—		

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:09	—	—	6.81	1.68	103.2	4.55	21.3
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) slight yellow colour, clear, no sheen / odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW137	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1008	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW137

PROJECT INFORMATION

PROJECT NUMBER: 2301084b	**INITIALS:** JU/CB
DATE: 21.3.24	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 3.392	**TOTAL DEPTH (mBTOC) :** 4.690	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (µS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:12			7.22	2702	121.3	2.03	21.0
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Cloudy, pale yellow, full sleeve

No odour, no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW137	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1 x PB	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW138

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.549	**TOTAL DEPTH (mBTOC) :** 12.639	**TIME:** 10:23
DEPTH TO PSH (mBTOC): –	**THICKNESS OF PSH (m):** –	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
Sampling attempted, bailed dry 11/12							
Not able to grab sample 11/12, left to recharge, SWL on 12/12. - 12.595mbtoc							
Sampling with bailer attempted again 12/12, unsuccessful							
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: GW138

PROJECT INFORMATION

PROJECT NAME:	PROJECT NUMBER: 24010346
DATE OF INSTALLATION: ~~22.1.24~~	INITIALS: RT
DATE: 22.1.24	WEATHER: Cloudy
PURGE METHOD:	

PURGE VOLUME CALCULATION

$$\left(\frac{12.801}{\text{Total depth (m)}} - \frac{12.423}{\text{Water level (m)}}\right) \times \frac{3}{\text{Well volumes}} \times 2\frac{50\ mm}{\text{Well}}\ \textbf{or}\ 7.8\frac{100\ mm}{\text{Well}} = \frac{\quad}{\text{Calculated Purge Volume}}\ \text{Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Well condition good, orange tinge water, clear, No odour, No sheen. 100mm retrieved with Bayler.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW139

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	11/12/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	12.778	**TOTAL DEPTH (mBTOC) :**	**TIME:** 12:53
DEPTH TO PSH (mBTOC):	–	**THICKNESS OF PSH (m):**	–

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1300	—	—	5.63	0.32	96.6	3.09	22.3

TOTAL PURGE VOLUME (L): | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown orange colour, some sed, v. turbid, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW139	**SAMPLE ID:** DS2b	**SAMPLE ID:** TS2D
SAMPLE TIME: 1300	**SAMPLE TIME:** 1300	**SAMPLE TIME:** 1300
NO. CONTAINERS: 1	**NO. CONTAINERS** 1	**NO. CONTAINERS** 1
ANALYSIS: PFAS	**ANALYSIS:** PFAS	**ANALYSIS:** PFAS

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW140

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.487	**TOTAL DEPTH (mBTOC):**	**TIME:** 13:19
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1323	—	—	5.58	0.55	97.5	5.07	22.7
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, opaque, some seed., no odour/sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW140	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1322	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW141

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.281	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1409
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1414	——	——	6.17	3.41	96.0	0.87	21.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, lots seed, turbid. No odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW141	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1413	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW142

PROJECT INFORMATION

PROJECT NUMBER: 2301034b	**INITIALS:** JV/CB
DATE: 21-3-24	**WEATHER:** SUNNY to SEMI-CLOUDED

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.175	**TOTAL DEPTH (mBTOC):** 14.750	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
14.46			5.75	2971	178.2	4.22	18.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Sheen 40% full. Opaque, orange, no odour or sheen. Filled 75% of a bottle. For water properties, collected extra with a bailer.

no odour
no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW142	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1x PB	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW143

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 2.261	**TOTAL DEPTH (mBTOC) :**	**TIME:** 1343
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1347	—		6.02	0.367	93.2	2.50	21.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown colour, opaque, some sed, no sheen/odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW143	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1346	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW144

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 9.019	**TOTAL DEPTH (mBTOC) :**	**TIME:** 14.40
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1444	—	—	6.46	0.87	93.8	1.62	20.6
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) orange brown colour, some sed., opaque, no odour/sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW144	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1443	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW145

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 8.432	**TOTAL DEPTH (mBTOC):**	**TIME:** 1505
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1512	—		5.10	0.234	86.9	7.50	20.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown colour, opaque, some sed., no odour/sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW145	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1510	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW146

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB
DATE: 11/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 7.872	**TOTAL DEPTH (mBTOC) :**	**TIME:** ~~1537~~ 1537
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1547	—	—	6.81	2.20	90.4	4.26	21.0
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) orange brown, lots seal., v. turbid, no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW146	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1545	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW146

PROJECT INFORMATION

PROJECT NUMBER: 2301346	**INITIALS:** JU / CB
DATE: 21.3.24	**WEATHER:** Cloud / Sun, dry

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 7.947	**TOTAL DEPTH (mBTOC) :** 8.540	**TIME:** 13:55
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (µS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:54			6.51	1900	149.7	5.54	19.1
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Took sample from bailer, hydrosleeve did not retrieve anything despite being rolled up. NEW Hydrosleeve left down hole.* Sample v. sediment rich, with sand

orange opaque no odour no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

*Hydrosleeve removed 22.3.24

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW146	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1 x PB	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW147

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** SYB/JU
DATE: 12/12/23	**WEATHER:**

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.726	**TOTAL DEPTH (mBTOC) :**	**TIME:** 09:33
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
0936		—	5.69	8.08	49.2	3.84	20.2
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, some sediment, opaque, no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW147	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 09:35	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW148

PROJECT INFORMATION

PROJECT NUMBER: 2301034	**INITIALS:** JV
DATE: 12 12 23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 3.707	**TOTAL DEPTH (mBTOC):**	**TIME:** 0950
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
9:58			6.46	5.75	67.6	4.36	19.5
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Orange brown, some sediment, no sheen, opaque, no odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW148	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 9:57	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW150

PROJECT INFORMATION

PROJECT NUMBER: 2301046	**INITIALS:** RT
DATE: 23/01/24	**WEATHER:** overcast -

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 7.493	**TOTAL DEPTH (mBTOC) :** 10.218	**TIME:** 10:58
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:27	–	–	7.05	3849	77.3	4.19	21.1
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Duplicate + Triplicate Taken.
good, orange tinge, clear, some sediment, No odour No, sheen.
Used Bayler for Field Parameters.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW150 DW TW	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:30	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 3	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS.	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW151

PROJECT INFORMATION

PROJECT NUMBER: 23010346	INITIALS: JV/CB
DATE: 21.8.24	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.299	TOTAL DEPTH (mBTOC): 15.601	TIME: 11:32
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (µS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:36			6.31	3401	120.7	1.71	20.1
11.38			6.36	3416	86.4	1.63	20.3
~~11.40~~							
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) No odour, cloudy, pale cream, no sheen. TW10B taken from refilled sleeve - orange, opaque water.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW151	SAMPLE ID: DW~~10~~4B	SAMPLE ID: TW~~10~~4B
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1x ~~PE~~ PB	NO. CONTAINERS 1x PB	NO. CONTAINERS 1xPB
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW152

PROJECT INFORMATION

PROJECT NUMBER: 2301086	**INITIALS:** RT
DATE: 23/01/24	**WEATHER:** Partly cloudy

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 7.263	**TOTAL DEPTH (mBTOC) :** 10.761	**TIME:** 9:15
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (~~MS/CM~~ µS/cm) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
9:25	–	–	6.95	2029	91.4	2.51	21.1
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) good, orange, some suspended fines, No odour No sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW152	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 9:20	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS.	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW153

PROJECT INFORMATION

PROJECT NUMBER: 23010346	**INITIALS:** RT
DATE: 22/01/24	**WEATHER:** Cloudy

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 13.760	**TOTAL DEPTH (mBTOC):** 17.150	**TIME:**
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3% (uS/cm)	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:59	—	—	6.02	8740	79.4	RT ~~2.2~~ 1.85	20.3
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, orange tinge, sediment towards bottom, No odour, No sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW153	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 10:58	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW155

PROJECT INFORMATION

PROJECT NUMBER: 2301034b	**INITIALS:** RT
DATE: 22/01/24	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.652	**TOTAL DEPTH (mBTOC) :** 18.608	**TIME:** 12:00
DEPTH TO PSH (mBTOC): ~	**THICKNESS OF PSH (m):** ~	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY ~~(MS/CM)~~ uS/cm +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:05	~	~	6.39	6218	106.9	1.18	20.5
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) good condition, orange tinge, clear, No odour, No sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW155	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 12:05	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS.	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW156

PROJECT INFORMATION

PROJECT NUMBER: 23010346	**INITIALS:** RT
DATE: 23/01/24	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 9.856m	**TOTAL DEPTH (mBTOC) :** 12.618	**TIME:** 11:46
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY ~~(MS/CM)~~ (uS/cm) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:59	–	–	6.33	901	96.4	2.51	21.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) good, orange tinge, clear, 1cm of sediment, No Odour, No Sheen. Remarked Well ID + Depth Marker.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW156	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 11:53	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS.	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW156

PROJECT INFORMATION

PROJECT NUMBER: 2301024b	**INITIALS:** JU
DATE: 22 3 24	**WEATHER:** overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 9.869	**TOTAL DEPTH (mBTOC):** 12.532	**TIME:** 9:30
DEPTH TO PSH (mBTOC): —	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
9:33			6.43	859 uS	~~188~~ 167.7	2.72	18.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Cloudy pale yellow, no odour / no sheen, sleeve full,

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW156	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 9:30	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1x PB	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW157

PROJECT INFORMATION

PROJECT NUMBER: 23010346	**INITIALS:** RT
DATE: 23/01/24	**WEATHER:** Overcast.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 11.726	**TOTAL DEPTH (mBTOC) :** 16.826	**TIME:** 1:20
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3% (µs/cm)	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1:26	—	—	6.34	1809	78.7	1.41	21.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) good, clear, No colour, No Odour

No sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW157	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1:23	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW158

PROJECT INFORMATION

PROJECT NUMBER: 23010346	**INITIALS:** JV
DATE: 22 3 24	**WEATHER:** Overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.860	**TOTAL DEPTH (mBTOC) :** 14.232	**TIME:** 10:45
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:58	—	—	6.03	4656 µS	174.7	2.67	19.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) pale yellow, no odour / no sheen, cloudy

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW158	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 10:45	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1xPB	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW1589

PROJECT INFORMATION

PROJECT NUMBER: 23010346	**INITIALS:** RT
DATE: 23/01/24	**WEATHER:** Overcast.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 12.528	**TOTAL DEPTH (mBTOC) :** 14.997	**TIME:** 3:50
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY ~~(MS/CM)~~ µScm +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
4.03	—	—	6.23	2.29	45.0	1.61	24.1
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) good. clear, No odour, slight brown tinge, No scum, No sheen, No odour.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW1589	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 3:56	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS,	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW160

PROJECT INFORMATION

PROJECT NUMBER: 23010346	**INITIALS:** RT
DATE: 22/01/24	**WEATHER:** Cloudy

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 13.151	**TOTAL DEPTH (mBTOC) :** 15.801	**TIME:** 1:11
DEPTH TO PSH (mBTOC): -	**THICKNESS OF PSH (m):** —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY ~~(MS/CM)~~ µS/cm +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1:17			6.30	3673	88.2	1.65	21.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

good, Brown tinge, clear, No odour, No sheen, 1cm sediment

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW160	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1:17	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW161

PROJECT INFORMATION

PROJECT NUMBER: 2301034b	INITIALS: JV/CB
DATE: 21.3.24	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): ~~15.104~~ 13.229	TOTAL DEPTH (mBTOC): 15.909	TIME: 12:16
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (µS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:18			5.92	4215	139.3	4.75	20.1

TOTAL PURGE VOLUME (L): | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour, no sheen, some orange sediment at base. Hydrosleeve full. Standing water level remeasured after removal of hydrosleeve as level below hydrosleeve

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☑

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW161	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 12:20	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1x PB	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW162

PROJECT INFORMATION

PROJECT NUMBER: 2301034 b	INITIALS: JV
DATE: 22 3 24	WEATHER: Overcast, dry

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 12.756	TOTAL DEPTH (mBTOC): 13.076	TIME: 12:00
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:11	—	—	6.38	10093 µS	153.4	1.34	19.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, sediment rich, no odour / no sheen

used bailer to get WQM jar

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW162	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 1XPB 12:15	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW163

PROJECT INFORMATION

PROJECT NUMBER: 23010346	**INITIALS:** JC
DATE: 22·3·24	**WEATHER:** partly Sunny, dry

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) : 1.886	**TOTAL DEPTH (mBTOC) :** 4.934	**TIME:** 10:05
DEPTH TO PSH (mBTOC): ——	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY ~~(MS/CM)~~ µS +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:13			6.36	3567	174.7	3.56	22.6
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, no odour / no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW163	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 10:10	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1x PB	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW164

PROJECT INFORMATION

PROJECT NUMBER: 2301034 B C	INITIALS: CB
DATE: 2/4/24	WEATHER: Overcast, ~~rare drops of~~ rain
SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐	

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 8.536	TOTAL DEPTH (mBTOC): 9.521	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:44			7.23	1030	278.3	4.27 4.6	20.6
					Water:	Orange, cloudy	

TOTAL PURGE VOLUME (L): | APPROX. SAMPLE PURGE RATE (LPM): to opaque, no odour, no sheen, base firm.

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Hydrasleeve empty. Put it down tried up with cable tie to fill. SWL measured after removal of sleeve. Water orange, cloudy no odour or sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1 x P B	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Finished 11.44

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW165

PROJECT INFORMATION

PROJECT NUMBER: 2701034C	INITIALS: JV
DATE: 2 4 24	WEATHER: wet, overcast

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 10.383	TOTAL DEPTH (mBTOC): 13.545	TIME: 11:30
DEPTH TO PSH (mBTOC): —	THICKNESS OF PSH (m): —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY ~~(uS/CM)~~ µS/CM +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:42	—	—	6.49	3915	184.1	---	19.3
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) cloudy, pale yellow, no odour / no sheen, firm base

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW165	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW166

PROJECT INFORMATION

PROJECT NUMBER: 2301034C	INITIALS: JW
DATE: 2 4 24	WEATHER: wet, overcast raining

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 3.588	TOTAL DEPTH (mBTOC): 6.596	TIME: 12:15
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:23							
12:25			5.51	4~~0~~3217	141.7	3.39	21.4
			5.51	325.1	104.5	1.00	21.5
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) clear, slightly cloudy, slight stagnant odour, no sheen from base, used hydrasleeve again to get trip.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW166	SAMPLE ID: DW1	SAMPLE ID: TW1
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS 1	NO. CONTAINERS 1
ANALYSIS:	ANALYSIS:	ANALYSIS:

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW167

PROJECT INFORMATION

PROJECT NUMBER: 2301034C	INITIALS: JV
DATE: 2 4 24	WEATHER: Overcast, rain

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 7.395	TOTAL DEPTH (mBTOC): ~~7.584~~	TIME: 10:50
DEPTH TO PSH (mBTOC): —	THICKNESS OF PSH (m): —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
~~11:00~~	—	—	6.~~05~~70	1451	226.0	~~(1.8%)~~	19.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, brown, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW167	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

GROUNDWATER SAMPLE LOG

Geo-Logix

WELL ID: GW168

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: CB
DATE: 2/4/24	WEATHER: Overcast, wet

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 7.287 (7.299 after sleeve removed)	TOTAL DEPTH (mBTOC): ~~7.344~~ 8.771	TIME: 12.10 PM
DEPTH TO PSH (mBTOC): — (before sleeve removed)	THICKNESS OF PSH (m): —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:52			6.61	1493	207.8	5.57	19.4
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) 20 cm in sleeve. Attempted to fill by rolling up. Repeated this twice. JH was able to make it fill eventually.

Water in sleeve from initial sleeve & from fit rolled up sleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW168	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1xPB	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW169

PROJECT INFORMATION

PROJECT NUMBER:	2201074 C	INITIALS:	JJ
DATE:	2 4 24	WEATHER:	Rain, wet, overcast
SAMPLING METHOD:	LOW FLOW: ☐	HYDRASLEEVE: ☒	BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 6.881	TOTAL DEPTH (mBTOC): 8.059	TIME: 13:01
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (uS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:17			5.61	280.1	170.1	—	18.6
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, brown, no odour/sheen, hard to go down with bailer to recover sample for VOM.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW169	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW170

PROJECT INFORMATION

PROJECT NUMBER: 2301034C	INITIALS: CB
DATE: 2/4/2024	WEATHER: overcast, intermittent rain.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 6.225	TOTAL DEPTH (mBTOC): 11.179	TIME: 14.00
DEPTH TO PSH (mBTOC): —	THICKNESS OF PSH (m): —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (~~MS~~/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
14:00			6.25	417.3	176.7	2.60	19.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) well felt sedimenty at base. Water pale tan & cloudy to silty brown at base of full sleeve. Metallic odour. No sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW170	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1 x PB	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW171

PROJECT INFORMATION

PROJECT NUMBER: 2301024c	INITIALS: JU
DATE: 2 4 24	WEATHER: rain, wet, overcast.

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 6.909	TOTAL DEPTH (mBTOC): 10.664	TIME: 13:51
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:56	—	—	6.11	583	242.1	2.47	18.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear slightly cloudy above 2cm of silty sand sediment. No odour / no sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW171	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW172

PROJECT INFORMATION

PROJECT NUMBER:	2301034C	INITIALS:	CB
DATE:	2/4/2024	WEATHER:	overcast, ~~occassional rain~~ → turning sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☑ BAILER: ☐

WELL GAUGING DETAILS (WL = 03 after sleeve removed)

STANDING WATER LEVEL (mBTOC):	7.892	TOTAL DEPTH (mBTOC):	9.484
DEPTH TO PSH (mBTOC):	before sleeve removed	THICKNESS OF PSH (m):	TIME:

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (µS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15:13			5.83	192.6	285.4	3.78	19.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

Filled to about 40 cm. Cloudy, orange. Bottle is 60% first sleeve, 40% second sleeve. Water quality is 100% second sleeve. Weight is down hole, lost.

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Silver lid + plastic cap already open when arrived. 34 cm in sleeve. Cloudy light yellow. Put down sleeve a second time but got stuck, weight broke off, no water. Put down new sleeve.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW172	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1 x PB	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW173

PROJECT INFORMATION

PROJECT NUMBER: 23010346	INITIALS: JV
DATE: 3 4 24	WEATHER: -0-

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 8.747	TOTAL DEPTH (mBTOC): 11.636	TIME: 11:08
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY ~~(MS~~/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:16	—	—	7.41	2496	-183.6	1.95 ↓	19.8
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) cloudy, pale yellow, stagnant odour same as GW174, firm base

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW173	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW174

PROJECT INFORMATION

PROJECT NUMBER: 2301034c	INITIALS: JU
DATE: 3 4 24	WEATHER: -0°

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 10.074	TOTAL DEPTH (mBTOC): 14.425.	TIME: 10:42
DEPTH TO PSH (mBTOC): after bailer out	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (µS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:51	—	—	6.64	9316	210.3	---	20.2
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) cloudy, pale yellow, stagnant water odour, no sheen, good well condition

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW174	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW175

PROJECT INFORMATION

PROJECT NUMBER: 2301034C	INITIALS: JV
DATE: 2 4 24	WEATHER: clearing, dry

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 8.820	TOTAL DEPTH (mBTOC): 12.471	TIME: 15:37
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15:54			7.55	1183	225.0	---	19.2
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Sample recovered is sediment-water slurry. Struggling to cave out of straw. brown, opaque, no odour or sheen very soft base.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW175	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: GW176

PROJECT INFORMATION

PROJECT NUMBER: 2301034C	INITIALS: JV
DATE: 2 4 24	WEATHER: overcast, not raining

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC): 6.427	TOTAL DEPTH (mBTOC): 8.876	TIME: 15:11
DEPTH TO PSH (mBTOC): —	THICKNESS OF PSH (m): —	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
15:18	—	—	6.78	25681	222.8	1.76	20.6
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) opaque, orange brown, no odour / no sheen, from base

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: GW176	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 1	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS:	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS:	ANALYSIS:	ANALYSIS:

APPENDIX J

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (30m)
Serial Number	01-8142
Client Name	Jenna Maltman (Geo-Logix)
Project Number	PO6285

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_2O, 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_2O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

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 interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

Checked By	William Pak
Calibration Date	26/03/2024
Calibration Due	26/09/2024

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WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Plus Water Quality Meter w/ 1m Quatro Cable
Serial Number	20L105295
Client Name	Jenna Maltman (Geo-Logix)
Project Number	PO6186/PO6188
Comments	-

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.	23.5	24.2	23.5	°C
pH	pH 4.00	386466	4.01	4.04	4.01	pH
pH	pH 7.00	387329	7.00	7.05	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2430	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	224.0	230.5	224.0	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.0	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	110.7	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.

Calibrated By	William Pak
Calibration Date	16/01/2024
Calibration Due	16/07/2024

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

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WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	21A103000
Client Name	Jenna Maltman/Joseph Unwin (Geo-Logix)
Project Number	PO6273
Comments	-

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.	25.0	24.8	25.0	°C
pH	pH 4.00	386466	4.01	4.07	4.01	pH
pH	pH 7.00	387329	7.00	7.04	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2805	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	229.0	236.8	229.0	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	-0.4	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	98.4	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.

Calibrated By	William Pak
Calibration Date	13/03/2024
Calibration Due	13/09/2024

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WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Plus Water Quality Meter w/ 1m Quatro Cable
Serial Number	21C100008
Client Name	Sarah Bolton (Geo-Logix)
Project Number	6118SB
Comments	-

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.	25.8	25.5	25.8	°C
pH	pH 4.00	386466	4.01	4.03	4.01	pH
pH	pH 7.00	387329	7.00	7.00	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2740	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	227.6	236.0	227.6	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.0	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	102.3	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.

Calibrated By	William Pak
Calibration Date	08/11/2023
Calibration Due	08/05/2024

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Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Plus Water Quality Meter w/ 1m Quatro Cable
Serial Number	21A102654
Client Name	Sarah Bolton (Geo-Logix)
Project Number	6151SB
Comments	-

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.	29.1	30.0	29.1	°C
pH	pH 4.00	386466	4.01	4.01	4.01	pH
pH	pH 7.00	387329	7.00	7.07	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2836	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	220.0	234.2	220.0	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.3	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	99.3	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.

Calibrated By	William Pak
Calibration Date	05/12/2023
Calibration Due	05/06/2024

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Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (30m)
Serial Number	01-8142
Client Name	Jenna Maltman (Geo-Logix)
Project Number	PO6285

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_2O, 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_2O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

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 interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

Checked By	William Pak
Calibration Date	26/03/2024
Calibration Due	26/09/2024

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Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	21A102653
Client Name	Jenna Maltman (Geo-Logix)
Project Number	PO6285
Comments	-

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.	24.0	23.0	24.0	°C
pH	pH 4.00	386466	4.01	3.85	4.01	pH
pH	pH 7.00	387329	7.00	6.93	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2802	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	231.0	233.8	231.0	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.2	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	100.5	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.

Calibrated By	William Pak
Calibration Date	27/03/2024
Calibration Due	27/09/2024

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Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	21A103000
Client Name	Jenna Maltman (Geo-Logix)
Project Number	PO6285
Comments	-

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.	24.0	23.3	24.0	°C
pH	pH 4.00	386466	4.01	4.04	4.01	pH
pH	pH 7.00	387329	7.00	7.06	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2726	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	231.0	227.4	231.0	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.7	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	112.1	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.

Calibrated By	William Pak
Calibration Date	27/03/2024
Calibration Due	27/09/2024

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Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Plus Water Quality Meter w/ 1m Quatro Cable
Serial Number	21C100008
Client Name	Sarah Bolton (Geo-Logix)
Project Number	PO6039
Comments	-

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.	16.2	17.2	16.2	°C
pH	pH 4.00	386466	4.01	3.99	4.01	pH
pH	pH 7.00	387329	7.00	7.00	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2646	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	248.8	250.8	248.8	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.9	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	100.7	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.

Calibrated By	William Pak
Calibration Date	10/09/2023
Calibration Due	10/03/2024

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Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	21A102653
Client Name	Jenna Maltman (Geo-Logix)
Project Number	PO6285
Comments	-

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.	24.0	23.0	24.0	°C
pH	pH 4.00	386466	4.01	3.85	4.01	pH
pH	pH 7.00	387329	7.00	6.93	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2802	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	231.0	233.8	231.0	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	0.2	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	100.5	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.

Calibrated By	William Pak
Calibration Date	27/03/2024
Calibration Due	27/09/2024

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APPENDIX K

Geo-Logix

Surface GROUNDWATER SAMPLE LOG

Sample ~~WELL~~ ID: DW1

PROJECT INFORMATION

PROJECT NUMBER: 230103 4	INITIALS: SYB
DATE: 13/9/23	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐ grab ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	~~TIME:~~
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1307	—	—	5.62	0.090	188.0	10.11	23.7
TOTAL PURGE VOLUME (L):		—	APPROX. SAMPLE PURGE RATE (LPM):		—		

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown colour, anerobic odour, lots of sediment, healthy flora / fauna

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING) —

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW1	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 1306	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

Surface GROUNDWATER SAMPLE LOG

Sample ~~WELL~~ ID: DW2

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: SYB
DATE: 13/9/23	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐ grab ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	~~TIME:~~
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
17:09	—	—	9.57	0.75	110.5	10.07	19.9
TOTAL PURGE VOLUME (L):		—	APPROX. SAMPLE PURGE RATE (LPM):		—		

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Brown colour, slightly opaque healthy flora/fauna, anerobic odour

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW2	SAMPLE ID: DS2	SAMPLE ID: TS2
SAMPLE TIME: 17:07	SAMPLE TIME: 17:07	SAMPLE TIME: 17:07
NO. CONTAINERS: 1	NO. CONTAINERS 1	NO. CONTAINERS 1
ANALYSIS: PFAS	ANALYSIS: PFAS	ANALYSIS: PFAS

ORIGINAL FIELD RECORD

Geo-Logix

Surface water GROUNDWATER SAMPLE LOG

SW ~~WELL ID:~~ DW3

PROJECT INFORMATION

PROJECT NUMBER:	230034	INITIALS:	SV/B
DATE:	10/11/23	WEATHER:	Sunny
SAMPLING METHOD:	LOW FLOW: ☐	HYDRASLEEVE: ☐	BAILER: ☐ grab ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1335	——		6.38	0.77	162.5	7.85	28.5
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Clear, organic odour, no sheen, healthy flora/fauna (ducks, fish etc)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW3	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 1333	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

WELL ID: surface water DW4

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB
DATE:	13/11/23	**WEATHER:**	

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐ grab

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	**TOTAL DEPTH (mBTOC) :**	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
12:37	—	—	7.81	0.78	149.0	9.90	25.7
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, green grey colour, no odour / sheen, healthy flora / fauna (ducks)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW4	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 12:35	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

GROUNDWATER SAMPLE LOG

~~WELL ID:~~ Surface surface water DW5

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: SYB
DATE: 13/11/23	WEATHER: Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐ grab

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	~~TOTAL DEPTH (mBTOC) :~~	~~TIME:~~
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1313			6.49	0.157	136.2	4.91	26.7
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) greenish grey, slightly opaque, healthy flora / fauna (ducks, fish, dam water veg, sheep) no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW5	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 1310	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUNDWATER~~ Surface SAMPLE LOG

~~WELL~~ surface water ID: DW 6

PROJECT INFORMATION

PROJECT NUMBER:	2301034	**INITIALS:**	SYB/JU
DATE:	12/12/23	**WEATHER:**	Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	**TOTAL DEPTH (mBTOC) :**	
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	**TIME:**

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
1344	—		9.65	0.99	25.4	9.50	29.3
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Relatively clear, healthy flora & fauna (fish, ducks, swans, algae), no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW6	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME: 1:42	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS: 1	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS: PFAS	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUNDWATER~~ Surface Water SAMPLE LOG

~~WELL ID:~~ DW87

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: JU/SYB
DATE: 12 12 23	WEATHER: 20°

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

~~STANDING WATER LEVEL (mBTOC)~~ :	~~TOTAL DEPTH (mBTOC)~~ :	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
13:50	—	—	8.77	0.99	41.2	7.73	32.2
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Relatively opaque, no observe flora & fauna in water. Flora around edge. no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW7	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 13:49	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUNDWATER~~ SURFACE WATER SAMPLE LOG

~~WELL~~ ID: DAM DWS

PROJECT INFORMATION

PROJECT NUMBER: 230103 4	INITIALS: JU/SYB
DATE: 12 12 23	WEATHER: -O-

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
2:13			5.92	0.434	64.1	4.40	32.0
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) opaque water, no observed flora and fauna, patches of vegetation on edge, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DWS	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 14:10	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUND~~WATER SAMPLE LOG

~~WELL~~ Surface Dam ID: DW9

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: JV
DATE: 12 12 23	WEATHER: -0°

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
2:32			9.35	0.83	368	8.62	31.9
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Relatively clear, Abundant fauna, no flora observed
No odour / sheen.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW9	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 2:30	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUNDWATER~~ SAMPLE LOG

~~WELL~~ ID: Surface Dam DW10

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: JU/SYB
DATE: 12 12 23	WEATHER: Q

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
3:00		→	7.33	0.77	48.4	6.61	30.2
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Opaque, green grey colour, algae, ducks, insects

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW10	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 2:55	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUNDWATER~~ SAMPLE LOG

Surface Pam

~~WELL~~ ID: DW11

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: JV/SYB
DATE: 13 12 23	WEATHER: Overcast 30+°C

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:16	——→		8.47	0.81	1.0	6.53	28.2
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Relatively clear, green grey, ducks, flora around edge, fish, no odour / sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW11	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 11:15	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUND~~WATER SAMPLE LOG

~~WELL~~ Surface Dam ID: DW12

PROJECT INFORMATION

PROJECT NUMBER: 2301034	INITIALS: JV / SYB
DATE: 13 12 23	WEATHER: overcast, hot

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	TOTAL DEPTH (mBTOC) :	TIME:
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
11:33			7.89	0.87	19.7	6.32	28.2
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Greenish orange, healthy flora & fauna (birds, water plants), opaque, no odour/sheen

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW12	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME: 11:30	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: PFAS	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

Geo-Logix

~~GROUND~~WATER SAMPLE LOG

Surface Pam

WELL ID: DW13

PROJECT INFORMATION

PROJECT NUMBER: 2301024	**INITIALS:** SYB/JU
DATE: 13/12/23	**WEATHER:** Sunny

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC) :	**TOTAL DEPTH (mBTOC) :**	**TIME:**
DEPTH TO PSH (mBTOC):	**THICKNESS OF PSH (m):**	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. SAMPLE PURGE RATE (LPM):				

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID:	**SAMPLE ID:**	**SAMPLE ID:**
SAMPLE TIME:	**SAMPLE TIME:**	**SAMPLE TIME:**
NO. CONTAINERS:	**NO. CONTAINERS**	**NO. CONTAINERS**
ANALYSIS:	**ANALYSIS:**	**ANALYSIS:**

ORIGINAL FIELD RECORD

Geo-Logix

Surface ~~GROUNDWATER~~ SAMPLE LOG

WELL ID: DW13

PROJECT INFORMATION

PROJECT NUMBER: 23010341	INITIALS: JV
DATE: 17 4 24	WEATHER: Sunny, dry

SAMPLING METHOD: LOW FLOW: ☐ HYDRASLEEVE: ☐ BAILER: ☐ DIRECT ☑

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTOC):	TOTAL DEPTH (mBTOC):	TIME: 14:20
DEPTH TO PSH (mBTOC):	THICKNESS OF PSH (m):	

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
14:28	—	—	7.12	1.24	181.1	---	24.1

TOTAL PURGE VOLUME (L): | APPROX. SAMPLE PURGE RATE (LPM):

OBSERVATIONS DURING SAMPLING

Light yellow colour in sample bottle. Slight sheen around perimeter.

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) Plant matter abundant in north corner and around northern boundary. Void of life in southern half with exception of algae on surface.

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ No odour. SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

Constant bubbling noise / popping noise.

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)

ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: DW13	SAMPLE ID: DW2C	SAMPLE ID: TW2C
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 1	NO. CONTAINERS 1	NO. CONTAINERS 1
ANALYSIS: PFAS	ANALYSIS: PFAS	ANALYSIS: PFAS

ORIGINAL FIELD RECORD

APPENDIX L



Plate 1 – Natural sandy clay at GW101.



Plate 2 – Natural sandy clay at GW103



Plate 3 – Sand removed from GW104.



Plate 4 – Sandy clay removed from GW105.



Plate 5 – Clay removed from GW106



Plate 6 – Silty sand removed from GW108.



Plate 7 – Sandy clay removed from GW109.



Plate 8 – Sandy clay within water bearing zone in GW109, consistent across the site.



Plate 9 – white clay removed from GW114.



Plate 10 – Clay with red mottle removed from GW115.



Plate 11 – Decontamination of augers utilised in drilling.



Plate 12 – Orange brown colour of groundwater at GW103.



Plate 13 – Sampling location DW1.



Plate 14 – Sampling location DW2.


Plate 1 – Natural silt at GW116/0.40-0.50m


Plate 2 – Natural sandy clay at GW116/0.90-1.00m


Plate 3 – Natural sandy clay at GW132/2.90-3.00m


Plate 4 – Surface water sampling location DW5


Plate 5 – Natural silty sand at GW139/0.40-0.50m


Plate 6 – Marked BH location after utility clearance



Plate 7 – Natural sand at GW150/0.40-0.50m



Plate 8 – Natural clay at GW162/0.40-0.50m



Plate 9 – Post-drilling condition GW158



Plate 10 – Decommissioning GW130



Plate 11 – Ground surface condition after the GW130 was decommissioned



Plate 12 – GW161 within cattle-proof fence



Plate 13 – Acquiring Water Quality Meter readings



Plate 14 – Water Quality Meter readings


Plate 15 – High plasticity clay at GW159 from 9.50 m.


Plate 16 – Natural silty sand at GW129/0.40-0.50m



Plate 1 – DW10 surface water sampling location



Plate 2 – Scanning borehole locations for utility services



Plate 3 – Canter truck drilling rig



Plate 4 – Natura clay at GW170



Plate 5 – Natural clay at GW171



Plate 6 – DW13 Surface water sampling location



Plate 7 – Acquiring Water Quality Meter readings



Plate 8 – Water Quality Meter readings



Plate 7 – GW171 moniotring well within cattle-proof fence



Plate 8 – Cohesive soil at GW175



Plate 9 – 3 bucket procedure used to decontaminate reuseable sampling equipment



Plate 8 – Recovered soil at GW171.

APPENDIX M

1ST December 2023

RE: Monitoring Well Locations Richmond

Hi Sarah,

Please find below table of values for the monitoring wells at Western Sydney Uni Site, Richmond.

The measurements are in AHD and MGA20,

Name	Easting	Northing	RL Lid	RL Conduit
GW116	292234.638	6277406.038		22.282
GW117	292895.435	6277192.059		22.371
GW118	292969.953	6277438.855		21.108
GW119	292793.596	6277775.738		18.498
GW120	292677.315	6277422.973		22.749
GW121	292445.836	6277173.618		21.432
GW122	292372.813	6277610.659		22.18
GW123	292235.446	6277828.816		22.984
GW124	292474.053	6278252.963		18.325
GW125	292320.683	6278661.83		17.506
GW126	290765.894	6278483.624	23.715	23.629
GW127	290678.463	6278536.508	23.64	23.535
GW128	291181.303	6278042.58	22.804	22.702
GW129	291026.537	6277894.406	22.738	22.632
GW130	291385.776	6278139.865	22.712	22.62
GW131	291658.307	6278098.257	22.66	22.59
GW132	291343.613	6278333.78		23.11
GW133	290577.108	6278609.27	24.045	23.94
GW134	290537.466	6278518.621	24.005	23.933

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

19/02/2024

RE: Monitoring Well Locations Richmond

Hi Sarah,

Please find below table of values for the monitoring wells at Western Sydney Uni Site, Richmond.

The measurements are in AHD and MGA20,

NAME	EASTING	NORTHING	LID	PIPE (BLACK MARK)
GW135	291935.883	6278136.303		19.699
GW136	291674.877	6277940.502		23.224
GW137	291748.279	6277807.728		22.509
GW138	291639.6	6277531.891		21.975
GW139	290669.962	6278725.039	24.291	24.204
GW140	290794.82	6278867.539	24.007	23.926
GW141	291230.917	6277649.717		23.24
GW142	291152.422	6277476.048		22.69
GW143	290535.183	6278416.703		24.03
GW144	291479.42	6278836.63		19.566
GW145	291709.064	6279080.495		18.851
GW146	291374.765	6279364.212		18.327
GW147	290497.505	6277891.505		23.58
GW148	290773.805	6277460.087		23.197
GW149	291988.597	6279215.147		17.98
GW150	291827.111	6278313.902		17.65

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

13/03/2024

RE: Monitoring Well Locations Richmond

Hi Sarah,

Please find below table of values for the monitoring wells at Western Sydney Uni Site, Richmond.

Name	Easting	Northing	Lid RL	Pipe RL
GW 157	291992.424	6277368.261		21.027
GW 158	291369.391	6277904.579	22.708	22.62
GW 159	291227.53	6277818.086	22.405	22.338
GW 162	293293.517	6276887.539		19.394
GW 170	293610.685	6278177.194		15.99
GW 172	293995.288	6277935.519		16.64
GW 173	293451.516	6279189.108	17.423	17.386
GW 174	293795.959	6279313.816	17.319	17.295
GW 175	294532.719	6277850.53		16.104
GW 176	294356.794	6276943.471		13.155
GW151	291601.829	6277394.403		21.72
GW152	291916.691	6279303.455		17.722
GW153	290532.604	6278257.498		23.911
GW154	290439.291	6277614.808		23.185
GW155	290473.303	6277985.089		23.502
GW156	291596.105	6278334.697		20.165
GW160	291352.798	6277366.868		22.591
GW161	291420.309	6277185.949		22.438
GW163	291417.477	6278139.652	22.587	22.495
GW164	292862.072	6278932.691		17.983
GW165	292872.54	6279209.273		19.872
GW166	292941.783	6279476.768		20.033
GW167	293615.821	6278970.082		15.967
GW168	293348.62	6278865.818		16.113
GW169	293085.56	6278613.245		15.89

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

Joseph Unwin

From: Glen Watson (Onsite Surveying) <glen@onsitesurveying.com.au>
Sent: Monday, 15 April 2024 5:01 PM
To: Jenna Maltman
Cc: Joseph Unwin
Subject: Re: Last wells

Hi Jenna,

GW120 RL = 22.667

GW171

E 293940.491
N 6278489.225
RL 15.575

Regards,

Glen Watson

Director

M: 0414 913 944

E: glen@onsitesurveying.com.au

W: www.onsitesurveying.com.au

PO Box 187, Oatley NSW 2223

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From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Monday, April 8, 2024 9:02:43 AM
To: Glen Watson (Onsite Surveying)
Cc: Joseph Unwin
Subject: Re: Last wells

Thanks glen
Sent from my iPhone

> On 8 Apr 2024, at 9:02 am, Glen Watson <glen@onsitesurveying.com.au> wrote:
>
> Hi Jenna, I'll get them this week.
>
> Sent from my iPhone
>
> > On 8 Apr 2024, at 8:47 am, Jenna Maltman <jmaltman@geo-logix.com.au> wrote:
> >
> > Hey Glen,
> >
> > Was just following on those last two wells. When do you think you might be able to get to them?
> >
> > Thanks
> >
> > **Jenna Maltman | Project Scientist**
> > Unit 2309/4 Daydream St, Warriewood NSW 2102
> > T: 02 9979 1722 | www.geo-logix.com.au
> >
> > <image001.png>
> >
> > This email message is intended only for the addressee(s) and contains information that may be confidential and/or copyright. If you are not the intended recipient please delete this email immediately. Use, disclosure or reproduction of this email by anyone other than the intended recipient(s) is strictly prohibited. No representation is made that this email or any attachments are free of viruses and the recipient is responsible for undertaking appropriate virus scanning. Any advice provided in or attached to this email is subjected to limitations.

From: Jenna Maltman
Sent: Tuesday, March 26, 2024 12:56 PM
To: Glen Watson (Onsite Surveying) <glen@onsitesurveying.com.au>
Subject: Last wells

Hi Glen

The last wells to survey are:
GW171 293940, 6278476
GW120 (this you have already done, but was knocked over and had to be fixed so level will have slightly changed – easting,northing will be exactly the same)

Any issues please let me know

Thankyou

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

<image001.png>

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13/03/2024

RE: Monitoring Well Locations Richmond

Hi Sarah,

Please find below table of values for the monitoring wells at Western Sydney Uni Site, Richmond.

Name	Easting	Northing	Lid RL	Pipe RL
GW 157	291992.424	6277368.261		21.027
GW 158	291369.391	6277904.579	22.708	22.62
GW 159	291227.53	6277818.086	22.405	22.338
GW 162	293293.517	6276887.539		19.394
GW 170	293610.685	6278177.194		15.99
GW 172	293995.288	6277935.519		16.64
GW 173	293451.516	6279189.108	17.423	17.386
GW 174	293795.959	6279313.816	17.319	17.295
GW 175	294532.719	6277850.53		16.104
GW 176	294356.794	6276943.471		13.155
GW151	291601.829	6277394.403		21.72
GW152	291916.691	6279303.455		17.722
GW153	290532.604	6278257.498		23.911
GW154	290439.291	6277614.808		23.185
GW155	290473.303	6277985.089		23.502
GW156	291596.105	6278334.697		20.165
GW160	291352.798	6277366.868		22.591
GW161	291420.309	6277185.949		22.438
GW163	291417.477	6278139.652	22.587	22.495
GW164	292862.072	6278932.691		17.983
GW165	292872.54	6279209.273		19.872
GW166	292941.783	6279476.768		20.033
GW167	293615.821	6278970.082		15.967
GW168	293348.62	6278865.818		16.113
GW169	293085.56	6278613.245		15.89

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

5TH June 2024

RE: Monitoring Well Locations Richmond

Hi Sarah,

Please find below table of values for the monitoring wells at Western Sydney Uni Site, Richmond.

The measurements are in AHD and MGA20,

MON WELL	EASTING	NORTHING	RL
GW101	289914.241	6279385.738	21.929
GW102	290360.896	6278889.265	25.256
GW103	289585.089	6278969.293	25.836
GW104	289402.219	6279513.518	22.925
GW105	289747.881	6279220.049	23.277
GW106	288486.407	6277921.443	20.795
GW107	288595.832	6277921.453	24.219
GW108	289559.125	6277569.628	22.8
GW109	290298.812	6277303.286	23.412
GW110	289689.246	6278317.125	24.084
GW111	289233.111	6278711.776	25.614
GW112	288965.156	6279041.829	26.377
GW113	288962.557	6279319.193	22.331
GW114	290229.23	6278313.558	23.612
GW115	290083.934	6278644.081	24.478

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

APPENDIX N

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX101/0.2-0.3	GX101/1.0-1.1	GX102/0.1-0.2	GX102/1.0-1.1	GX103/0.0-0.1
	HILs - A	Indirect	Depth (m)	0.2-0.3	1.0-1.1	0.1-0.2	1.0-1.1	0.0-0.1
		Exposure	Date	21/08/2023	21/08/2023	21/08/2023	21/08/2023	22/08/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX101/0.2-0.3	GX101/1.0-1.1	GX102/0.1-0.2	GX102/1.0-1.1	GX103/0.0-0.1
	HILs - A	Indirect	Depth (m)	0.2-0.3	1.0-1.1	0.1-0.2	1.0-1.1	0.0-0.1
		Exposure	Date	21/08/2023	21/08/2023	21/08/2023	21/08/2023	22/08/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX103/1.1-1.2	GX104/0.1-0.2	GX104/1.1-1.2	GX105/0.3-0.4	GX105/1.0-1.1
	HILs - A	Indirect	Depth (m)	1.1-1.2	0.1-0.2	1.1-1.2	0.3-0.4	1.0-1.1
		Exposure	Date	22/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX103/1.1-1.2	GX104/0.1-0.2	GX104/1.1-1.2	GX105/0.3-0.4	GX105/1.0-1.1
	HILs - A	Indirect	Depth (m)	1.1-1.2	0.1-0.2	1.1-1.2	0.3-0.4	1.0-1.1
		Exposure	Date	22/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX106/0.2-0.3	GX106/0.9-1.0	GX107/0.0-0.1	GX107/1.1-1.2	GX108/0.3-0.4
	HILs - A	Indirect	Depth (m)	0.2-0.3	0.9-1.0	0.0-0.1	1.1-1.2	0.3-0.4
		Exposure	Date	24/08/2023	24/08/2023	24/08/2023	24/08/2023	25/08/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

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Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX106/0.2-0.3	GX106/0.9-1.0	GX107/0.0-0.1	GX107/1.1-1.2	GX108/0.3-0.4
	HILs - A	Indirect	Depth (m)	0.2-0.3	0.9-1.0	0.0-0.1	1.1-1.2	0.3-0.4
		Exposure	Date	24/08/2023	24/08/2023	24/08/2023	24/08/2023	25/08/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX108/1.0-1.1	GX109/0.1-0.2	GX109/0.9-1.0	GX110/0.2-0.3	GX110/0.9-1.0
	HILs - A	Indirect	Depth (m)	1.0-1.1	0.1-0.2	0.9-1.0	0.2-0.3	0.9-1.0
		Exposure	Date	25/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX108/1.0-1.1	GX109/0.1-0.2	GX109/0.9-1.0	GX110/0.2-0.3	GX110/0.9-1.0
	HILs - A	Indirect	Depth (m)	1.0-1.1	0.1-0.2	0.9-1.0	0.2-0.3	0.9-1.0
		Exposure	Date	25/08/2023	28/08/2023	28/08/2023	28/08/2023	28/08/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX111/0.1-0.2	GX111/1.3-1.4	GX112/0.1-0.2	GX112/1.7-1.8	GX113/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.1-0.2	1.3-1.4	0.1-0.2	1.7-1.8	0.4-0.5
		Exposure	Date	29/08/2023	29/08/2023	30/08/2023	30/08/2023	30/08/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX111/0.1-0.2	GX111/1.3-1.4	GX112/0.1-0.2	GX112/1.7-1.8	GX113/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.1-0.2	1.3-1.4	0.1-0.2	1.7-1.8	0.4-0.5
		Exposure	Date	29/08/2023	29/08/2023	30/08/2023	30/08/2023	30/08/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX113/0.9-1.0	GX114/0.1-0.2	GX114/1.0-1.1	GX115/0.0-0.1	GX115/0.9-1.0
	HILs - A	Indirect	Depth (m)	0.9-1.0	0.1-0.2	1.0-1.1	0.0-0.1	0.9-1.0
		Exposure	Date	30/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1a : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU Western Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX113/0.9-1.0	GX114/0.1-0.2	GX114/1.0-1.1	GX115/0.0-0.1	GX115/0.9-1.0
	HILs - A	Indirect	Depth (m)	0.9-1.0	0.1-0.2	1.0-1.1	0.0-0.1	0.9-1.0
		Exposure	Date	30/08/2023	31/08/2023	31/08/2023	31/08/2023	31/08/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX116/0.4-0.5	GX116/0.9-1.0	GX117/0.3-0.4	GX117/0.9-1.0	GX118/0.3-0.4
	HILs - A	Indirect	Depth (m)	0.4-0.5	0.9-1.0	0.3-0.4	0.9-1.0	0.3-0.4
		Exposure	Date	19/10/2023	19/10/2023	19/10/2023	19/10/2023	20/10/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX116/0.4-0.5	GX116/0.9-1.0	GX117/0.3-0.4	GX117/0.9-1.0	GX118/0.3-0.4
	HILs - A	Indirect	Depth (m)	0.4-0.5	0.9-1.0	0.3-0.4	0.9-1.0	0.3-0.4
		Exposure	Date	19/10/2023	19/10/2023	19/10/2023	19/10/2023	20/10/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX118/1.0-1.1	GX119/0.4-0.5	GX119/1.3-1.4	GX120/0.4-0.5	GX120/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.0-1.1	0.4-0.5	1.3-1.4	0.4-0.5	1.4-1.5
		Exposure	Date	20/10/2023	20/10/2023	20/10/2023	23/10/2023	23/10/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX118/1.0-1.1	GX119/0.4-0.5	GX119/1.3-1.4	GX120/0.4-0.5	GX120/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.0-1.1	0.4-0.5	1.3-1.4	0.4-0.5	1.4-1.5
		Exposure	Date	20/10/2023	20/10/2023	20/10/2023	23/10/2023	23/10/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
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10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX121/0.4-0.5	GX121/1.4-1.5	GX122/0.4-0.5	GX122/1.4-1.5	GX123/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	23/10/2023	23/10/2023	24/10/2023	24/10/2023	24/10/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX121/0.4-0.5	GX121/1.4-1.5	GX122/0.4-0.5	GX122/1.4-1.5	GX123/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	23/10/2023	23/10/2023	24/10/2023	24/10/2023	24/10/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX123/1.4-1.5	GX124/0.4-0.5	GX124/1.4-4.5	GX125/0.5-0.6	GX125/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-4.5	0.5-0.6	1.4-1.5
		Exposure	Date	24/10/2023	25/10/2023	25/10/2023	25/10/2023	25/10/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX123/1.4-1.5	GX124/0.4-0.5	GX124/1.4-4.5	GX125/0.5-0.6	GX125/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-4.5	0.5-0.6	1.4-1.5
		Exposure	Date	24/10/2023	25/10/2023	25/10/2023	25/10/2023	25/10/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX126/0.4-0.5	GX126/1.4-1.5	GX127/0.5-0.6	GX127/1.4-1.5	GX128/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.5-0.6	1.4-1.5	0.4-0.5
		Exposure	Date	30/10/2023	30/10/2023	31/10/2023	31/10/2023	31/10/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX126/0.4-0.5	GX126/1.4-1.5	GX127/0.5-0.6	GX127/1.4-1.5	GX128/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.5-0.6	1.4-1.5	0.4-0.5
		Exposure	Date	30/10/2023	30/10/2023	31/10/2023	31/10/2023	31/10/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX128/1.4-1.5	GX129/0.4-0.5	GX129/1.4-1.5	GX130/0.4-0.5	GX130/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	31/10/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
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EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
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10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX128/1.4-1.5	GX129/0.4-0.5	GX129/1.4-1.5	GX130/0.4-0.5	GX130/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	31/10/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX131/0.4-0.5	GX131/1.4-1.5	GX132/0.4-0.5	GX132/1.4-1.5	GX133/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	1/11/2023	1/11/2023	2/11/2023	2/11/2023	2/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX131/0.4-0.5	GX131/1.4-1.5	GX132/0.4-0.5	GX132/1.4-1.5	GX133/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	1/11/2023	1/11/2023	2/11/2023	2/11/2023	2/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX133/1.4-1.5	GX134/0.4-0.5	GX134/1.4-1.5	GX135/0.4-0.5	GX135/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	2/11/2023	3/11/2023	3/11/2023	23/11/2023	23/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX133/1.4-1.5	GX134/0.4-0.5	GX134/1.4-1.5	GX135/0.4-0.5	GX135/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	2/11/2023	3/11/2023	3/11/2023	23/11/2023	23/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX136/0.4-0.5	GX-136/1.3-1.4	GX137/0.4-0.5	GX137/2.9-3.0	GX138/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.3-1.4	0.4-0.5	2.9-3.0	0.4-0.5
		Exposure	Date	22/11/2023	22/11/2023	22/11/2023	22/11/2023	22/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
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8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX136/0.4-0.5	GX-136/1.3-1.4	GX137/0.4-0.5	GX137/2.9-3.0	GX138/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.3-1.4	0.4-0.5	2.9-3.0	0.4-0.5
		Exposure	Date	22/11/2023	22/11/2023	22/11/2023	22/11/2023	22/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
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4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
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8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX138/1.4-1.5	GX139/0.4-0.5	GX139/2.9-3.0	GX140/0.4-0.5	GX140/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	22/11/2023	24/11/2023	24/11/2023	24/11/2023	24/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX138/1.4-1.5	GX139/0.4-0.5	GX139/2.9-3.0	GX140/0.4-0.5	GX140/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	22/11/2023	24/11/2023	24/11/2023	24/11/2023	24/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX141/0.4-0.5	GX141/1.4-1.5	GX142/0.4-0.5	GX142/2.0-2.1	GX143/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	2.0-2.1	0.4-0.5
		Exposure	Date	27/11/2023	27/11/2023	27/11/2023	27/11/2023	28/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX141/0.4-0.5	GX141/1.4-1.5	GX142/0.4-0.5	GX142/2.0-2.1	GX143/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	2.0-2.1	0.4-0.5
		Exposure	Date	27/11/2023	27/11/2023	27/11/2023	27/11/2023	28/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX143/1.4-1.5	GX-144/0.4-0.5	GX-144/2.4-2.5	GX145/0.4-0.5	GX145/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	2.4-2.5	0.4-0.5	1.4-1.5
		Exposure	Date	28/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

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EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX143/1.4-1.5	GX-144/0.4-0.5	GX-144/2.4-2.5	GX145/0.4-0.5	GX145/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	2.4-2.5	0.4-0.5	1.4-1.5
		Exposure	Date	28/11/2023	29/11/2023	29/11/2023	29/11/2023	29/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX146/0.4-0.5	GX146/1.4-1.5	GX147/0.4-0.5	GX147/2.9-3.0	GX148/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	2.9-3.0	0.4-0.5
		Exposure	Date	30/11/2023	30/11/2023	30/11/2023	30/11/2023	1/12/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX146/0.4-0.5	GX146/1.4-1.5	GX147/0.4-0.5	GX147/2.9-3.0	GX148/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	2.9-3.0	0.4-0.5
		Exposure	Date	30/11/2023	30/11/2023	30/11/2023	30/11/2023	1/12/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX148/1.4-1.5	GX149/0.4-0.5	GX-149/2.9-3.0	GX150/0.4-0.5	GX150/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	1/12/2023	1/12/2023	1/12/2023	7/12/2023	7/12/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Bold/red indicates exceedance of assessment criteria
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
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10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX148/1.4-1.5	GX149/0.4-0.5	GX-149/2.9-3.0	GX150/0.4-0.5	GX150/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	1/12/2023	1/12/2023	1/12/2023	7/12/2023	7/12/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
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4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX151/0.4-0.5	GX151/1.4-1.5	GX152/0.4-0.5	GX152/1.4-1.5	GX153/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	7/12/2023	7/12/2023	15/12/2023	15/12/2023	8/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX151/0.4-0.5	GX151/1.4-1.5	GX152/0.4-0.5	GX152/1.4-1.5	GX153/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	7/12/2023	7/12/2023	15/12/2023	15/12/2023	8/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX153/1.4-1.5	GX154/0.4-0.5	GX154/1.4-1.5	GX155/0.5-0.6	GX155/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.5-0.6	1.4-1.5
		Exposure	Date	8/01/2024	8/01/2024	8/01/2024	9/01/2024	9/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX153/1.4-1.5	GX154/0.4-0.5	GX154/1.4-1.5	GX155/0.5-0.6	GX155/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.5-0.6	1.4-1.5
		Exposure	Date	8/01/2024	8/01/2024	8/01/2024	9/01/2024	9/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX156/0.4-0.5	GX156/1.4-1.5	GX157/0.5-0.6	GX157/1.5-1.6	GX158/0.5-0.6
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.5-0.6	1.5-1.6	0.5-0.6
		Exposure	Date	9/01/2024	9/01/2024	10/01/2024	10/01/2024	11/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX156/0.4-0.5	GX156/1.4-1.5	GX157/0.5-0.6	GX157/1.5-1.6	GX158/0.5-0.6
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.5-0.6	1.5-1.6	0.5-0.6
		Exposure	Date	9/01/2024	9/01/2024	10/01/2024	10/01/2024	11/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
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10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX158/1.4-1.5	GX159/0.4-0.5	GX159/1.4-1.5	GX160/0.5-0.6	GX160/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.5-0.6	1.4-1.5
		Exposure	Date	11/01/2024	11/01/2024	11/01/2024	12/01/2024	12/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX158/1.4-1.5	GX159/0.4-0.5	GX159/1.4-1.5	GX160/0.5-0.6	GX160/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.5-0.6	1.4-1.5
		Exposure	Date	11/01/2024	11/01/2024	11/01/2024	12/01/2024	12/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX161/0.4-0.5	GX161/1.4-1.5	GX162/0.4-0.5	GX162/1.4-1.5	GX163/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	12/01/2024	12/01/2024	30/01/2024	30/01/2024	22/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

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Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX161/0.4-0.5	GX161/1.4-1.5	GX162/0.4-0.5	GX162/1.4-1.5	GX163/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5
		Exposure	Date	12/01/2024	12/01/2024	30/01/2024	30/01/2024	22/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
		EGV	Sample ID	GX163/1.5-1.6
	HILs - A	Indirect	Depth (m)	1.5-1.6
		Exposure	Date	22/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5
Perfluorononanesulfonic acid-PFNS	-	-		--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5
Perfluorobutanoic acid-PFBA	-	-		< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5
Perfluorooctanoic acid-PFOA	-	-		< 5
Perfluorononanoic acid-PFNA	-	-		< 5
Perfluorodecanoic acid-PFDA	-	-		< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1b : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Central Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
		EGV	Sample ID	GX163/1.5-1.6
	HILs - A	Indirect	Depth (m)	1.5-1.6
		Exposure	Date	22/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5
MeFOSA	-	-		< 5
EtFOSA	-	-		< 5
MeFOSE	-	-		< 5
EtFOSE	-	-		< 5
MeFOSAA	-	-		< 10
EtFOSAA	-	-		< 10
4:2 FTS	-	-		< 5
6:2 FTS	-	-		< 10
8:2 FTS	-	-		< 5
10:2 FTS	-	-		< 5
PFOA + PFOS	-	-		< 5
PFHxS + PFOS	-	-		< 5
Total PFASs	-	-		ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX164/0.4-0.5	GX164/1.4-1.5	GX165/0.4-0.5	GX165/1.5-1.6	GX166/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.5-1.6	0.4-0.5
		Exposure	Date	22/01/2024	22/01/2024	23/01/2024	23/01/2024	23/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
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Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX164/0.4-0.5	GX164/1.4-1.5	GX165/0.4-0.5	GX165/1.5-1.6	GX166/0.4-0.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	1.5-1.6	0.4-0.5
		Exposure	Date	22/01/2024	22/01/2024	23/01/2024	23/01/2024	23/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX166/1.4-1.5	GX167/0.4-0.5	GX167/1.4-1.5	GX168/0.4-0.5	GX168/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	23/01/2024	24/01/2024	24/01/2024	24/01/2024	24/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
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8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX166/1.4-1.5	GX167/0.4-0.5	GX167/1.4-1.5	GX168/0.4-0.5	GX168/1.4-1.5
	HILs - A	Indirect	Depth (m)	1.4-1.5	0.4-0.5	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	23/01/2024	24/01/2024	24/01/2024	24/01/2024	24/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
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8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
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Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX169/0.4-0.5	GX169/1.4-1.5	GX169/2.9-3.0	GX170/0.4-0.5	GX170/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	24/01/2024	24/01/2024	24/01/2024	27/02/2024	27/02/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

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Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX169/0.4-0.5	GX169/1.4-1.5	GX169/2.9-3.0	GX170/0.4-0.5	GX170/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	24/01/2024	24/01/2024	24/01/2024	27/02/2024	27/02/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

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EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX171/0.4-0.5	GX171/1.4-1.5	GX171/2.9-3.0	GX172/0.4-0.5	GX172/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	25/03/2024	25/03/2024	25/03/2024	29/01/2024	29/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX171/0.4-0.5	GX171/1.4-1.5	GX171/2.9-3.0	GX172/0.4-0.5	GX172/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	2.9-3.0	0.4-0.5	1.4-1.5
		Exposure	Date	25/03/2024	25/03/2024	25/03/2024	29/01/2024	29/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX173/0.4-0.5	GX173/1.4-1.5	GX174/0.4-0.5	GX174/0.9-1.0	GX174/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	0.9-1.0	1.4-1.5
		Exposure	Date	26/02/2024	26/02/2024	26/02/2024	26/02/2024	26/02/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX173/0.4-0.5	GX173/1.4-1.5	GX174/0.4-0.5	GX174/0.9-1.0	GX174/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.4-0.5	1.4-1.5	0.4-0.5	0.9-1.0	1.4-1.5
		Exposure	Date	26/02/2024	26/02/2024	26/02/2024	26/02/2024	26/02/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX175/0.3-0.4	GX175/1.4-1.5	GX176/0.4-0.5	GX176/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.3-0.4	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	27/02/2024	27/02/2024	29/01/2024	29/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	< 5	< 5
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	< 5	< 5
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	< 5	< 5
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	< 5	< 5
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	< 5	< 5
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	< 5	< 5
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	< 5	< 5
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	< 5	< 5
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	< 5	< 5
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	< 5	< 5
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	< 5	< 5
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 1c : Summary of Soil Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 Eastern Portion

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
		EGV	Sample ID	GX175/0.3-0.4	GX175/1.4-1.5	GX176/0.4-0.5	GX176/1.4-1.5
	HILs - A	Indirect	Depth (m)	0.3-0.4	1.4-1.5	0.4-0.5	1.4-1.5
		Exposure	Date	27/02/2024	27/02/2024	29/01/2024	29/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	< 5	< 5
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	< 5	< 5
MeFOSA	-	-		< 5	< 5	< 5	< 5
EtFOSA	-	-		< 5	< 5	< 5	< 5
MeFOSE	-	-		< 5	< 5	< 5	< 5
EtFOSE	-	-		< 5	< 5	< 5	< 5
MeFOSAA	-	-		< 10	< 10	< 10	< 10
EtFOSAA	-	-		< 10	< 10	< 10	< 10
4:2 FTS	-	-		< 5	< 5	< 5	< 5
6:2 FTS	-	-		< 10	< 10	< 10	< 10
8:2 FTS	-	-		< 5	< 5	< 5	< 5
10:2 FTS	-	-		< 5	< 5	< 5	< 5
PFOA + PFOS	-	-		< 5	< 5	< 5	< 5
PFHxS + PFOS	-	-		< 5	< 5	< 5	< 5
Total PFASs	-	-		ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 2 : Summary of Shallow Perched Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW112	GW119	GW119_	GW130	GW131
	99%	95%	Date	13/09/2023	10/11/2023	21/03/2024	13/11/2023	13/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	0.01	< 0.01	0.82	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	0.03	0.03	2.5	0.03
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	0.02	0.02	2.2	0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	0.11	0.09	8.7	0.07
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	0.25	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	**0.32**	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	0.14	0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	0.29	0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	1.5	0.02
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	0.2	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	0.24	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 2 : Summary of Shallow Perched Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW112	GW119	GW119_	GW130	GW131
	99%	95%	Date	13/09/2023	10/11/2023	21/03/2024	13/11/2023	13/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	0.56	< 0.01
PFHxS + PFOS	-	-		< 0.01	0.11	0.09	9.02	0.07
Total PFASs	-	-		ND	0.16	0.14	16.34	0.19

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 2 : Summary of Shallow Perched Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW131_	GW132	GW137	GW137_	GW163_
	99%	95%	Date	21/03/2024	13/11/2023	11/12/2023	21/03/2024	21/03/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		0.01	0.03	0.02	0.02	2.2
Perfluorobutanesulfonic acid-PFBS	-	-		0.03	0.04	0.03	0.02	4.8
Perfluoropentanesulfonic acid-PFPeS	-	-		0.01	0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		0.09	0.02	0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	**0.02**	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		0.06	< 0.05	< 0.05	< 0.05	0.31
Perfluoropentanoic acid-PFPeA	-	-		0.01	< 0.01	< 0.01	< 0.01	0.45
Perfluorohexanoic acid-PFHxA	-	-		0.02	< 0.01	< 0.01	< 0.01	2
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	0.04
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 2 : Summary of Shallow Perched Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW131_	GW132	GW137	GW137_	GW163_
	99%	95%	Date	21/03/2024	13/11/2023	11/12/2023	21/03/2024	21/03/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	0.08	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	0.02	< 0.01	0.04
PFHxS + PFOS	-	-		0.09	0.02	0.03	< 0.01	< 0.01
Total PFASs	-	-		0.22	0.07	0.14	0.02	7.6

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 2 : Summary of Shallow Perched Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
	Freshwater	Freshwater	Sample ID	GW166
	99%	95%	Date	2/04/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 2 : Summary of Shallow Perched Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
	Freshwater	Freshwater	Sample ID	GW166
	99%	95%	Date	2/04/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05
MeFOSA	-	-		< 0.05
EtFOSA	-	-		< 0.05
MeFOSE	-	-		< 0.05
EtFOSE	-	-		< 0.05
MeFOSAA	-	-		< 0.05
EtFOSAA	-	-		< 0.05
4:2 FTS	-	-		< 0.01
6:2 FTS	-	-		< 0.05
8:2 FTS	-	-		< 0.01
10:2 FTS	-	-		< 0.01
PFOA + PFOS	-	-		< 0.01
PFHxS + PFOS	-	-		0.01
Total PFASs	-	-		0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW101	GW102	GW103	GW103_	GW104
	99%	95%	Date	13/09/2023	13/09/2023	13/09/2023	2/04/2024	13/09/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	0.01	0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	0.01	0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	0.07	0.06	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	0.03	0.02	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	0.07	0.06	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
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MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW101	GW102	GW103	GW103_	GW104
	99%	95%	Date	13/09/2023	13/09/2023	13/09/2023	2/04/2024	13/09/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	0.07	0.06	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	0.07	0.06	< 0.01
Total PFASs	-	-		ND	ND	0.19	0.16	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
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EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW105	GW106	GW107	GW108	GW109
	99%	95%	Date	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW105	GW106	GW107	GW108	GW109
	99%	95%	Date	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW110	GW111	GW113	GW114	GW115
	99%	95%	Date	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW110	GW111	GW113	GW114	GW115
	99%	95%	Date	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW116	GW117	GW118	GW120_	GW121
	99%	95%	Date	10/11/2023	10/11/2023	10/11/2023	21/03/2024	10/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW116	GW117	GW118	GW120_	GW121
	99%	95%	Date	10/11/2023	10/11/2023	10/11/2023	21/03/2024	10/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW122	GW123	GW124	GW125	GW126
	99%	95%	Date	10/11/2023	10/11/2023	10/11/2023	13/11/2023	13/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
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Bold/red indicates exceedance of assessment criteria
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
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Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW122	GW123	GW124	GW125	GW126
	99%	95%	Date	10/11/2023	10/11/2023	10/11/2023	13/11/2023	13/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
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– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
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EtFOSA = N-ethylperfluoro-1-octane sulfonamide
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EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW127	GW128	GW128_	GW129	GW133
	99%	95%	Date	13/11/2023	13/11/2023	22/03/2024	13/11/2023	13/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	0.03	0.05	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	0.07	0.08	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	0.03	0.04	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	0.17	0.19	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	0.01	0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW127	GW128	GW128_	GW129	GW133
	99%	95%	Date	13/11/2023	13/11/2023	22/03/2024	13/11/2023	13/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	0.17	0.19	< 0.01	< 0.01
Total PFASs	-	-		ND	0.28	0.32	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW134	GW135	GW136	GW136_	GW138
	99%	95%	Date	13/11/2023	11/12/2023	11/12/2023	21/03/2024	22/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	0.18	0.02	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	0.45	0.05	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	0.4	0.05	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	0.16	0.15	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	**0.08**	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	0.09	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	0.06	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	0.33	0.04	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	0.02	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	0.03	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW134	GW135	GW136	GW136_	GW138
	99%	95%	Date	13/11/2023	11/12/2023	11/12/2023	21/03/2024	22/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	0.27	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	0.11	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	0.16	0.23	< 0.01
Total PFASs	-	-		ND	ND	1.69	0.5	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW139	GW140	GW141	GW142_	GW143
	99%	95%	Date	11/12/2023	11/12/2023	11/12/2023	21/03/2024	11/12/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	0.03	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	0.04	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	0.02	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	0.07	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW139	GW140	GW141	GW142_	GW143
	99%	95%	Date	11/12/2023	11/12/2023	11/12/2023	21/03/2024	11/12/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	0.07	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	0.13	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW144	GW145	GW146	GW146_	GW147
	99%	95%	Date	11/12/2023	11/12/2023	11/12/2023	21/03/2024	12/12/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	0.02	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW144	GW145	GW146	GW146_	GW147
	99%	95%	Date	11/12/2023	11/12/2023	11/12/2023	21/03/2024	12/12/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	0.01	0.02	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
	Freshwater	Freshwater	Sample ID	GW148	GW150	GW151_	GW152	GW153
	99%	95%	Date	12/12/2023	23/01/2024	21/03/2024	23/01/2024	22/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW148	GW150	GW151_	GW152	GW153
	99%	95%	Date	12/12/2023	23/01/2024	21/03/2024	23/01/2024	22/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW155	GW156	GW156_	GW157	GW158_
	99%	95%	Date	22/01/2024	23/01/2024	22/03/2024	23/01/2024	22/03/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	0.04	0.04	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	0.09	0.08	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	0.08	0.07	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	0.73	0.69	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	0.02	0.02	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	**0.03**	**0.05**	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	0.03	0.04	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	0.07	0.07	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	0.02	0.02	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW155	GW156	GW156_	GW157	GW158_
	99%	95%	Date	22/01/2024	23/01/2024	22/03/2024	23/01/2024	22/03/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	0.05	0.07	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	0.76	0.74	< 0.01	< 0.01
Total PFASs	-	-		ND	1.07	1.05	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW159	GW160	GW161_	GW162_	GW164
	99%	95%	Date	23/01/2024	22/01/2024	21/03/2024	22/03/2024	2/04/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
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Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW159	GW160	GW161_	GW162_	GW164
	99%	95%	Date	23/01/2024	22/01/2024	21/03/2024	22/03/2024	2/04/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW165	GW167	GW168	GW169	GW170
	99%	95%	Date	2/04/2024	2/04/2024	2/04/2024	2/04/2024	2/04/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW165	GW167	GW168	GW169	GW170
	99%	95%	Date	2/04/2024	2/04/2024	2/04/2024	2/04/2024	2/04/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW171	GW172	GW173	GW174	GW175
	99%	95%	Date	2/04/2024	2/04/2024	3/04/2024	3/04/2024	2/04/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW171	GW172	GW173	GW174	GW175
	99%	95%	Date	2/04/2024	2/04/2024	3/04/2024	3/04/2024	2/04/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
	Freshwater	Freshwater	Sample ID	GW176
	99%	95%	Date	2/04/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 3 : Summary of Regional Groundwater Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
	Freshwater	Freshwater	Sample ID	GW176
	99%	95%	Date	2/04/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05
MeFOSA	-	-		< 0.05
EtFOSA	-	-		< 0.05
MeFOSE	-	-		< 0.05
EtFOSE	-	-		< 0.05
MeFOSAA	-	-		< 0.05
EtFOSAA	-	-		< 0.05
4:2 FTS	-	-		< 0.01
6:2 FTS	-	-		< 0.05
8:2 FTS	-	-		< 0.01
10:2 FTS	-	-		< 0.01
PFOA + PFOS	-	-		< 0.01
PFHxS + PFOS	-	-		< 0.01
Total PFASs	-	-		ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 4 : Summary of Surface Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	DW1	DW2	DW3	DW4	DW5
	99%	95%	Date	13/09/2023	13/09/2023	10/11/2023	13/11/2023	13/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	0.01	0.02	0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	**0.02**	**0.03**	**0.02**	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	0.02	0.02	0.02	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	0.02	0.01	0.02	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	0.01	< 0.01	0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 4 : Summary of Surface Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	DW1	DW2	DW3	DW4	DW5
	99%	95%	Date	13/09/2023	13/09/2023	10/11/2023	13/11/2023	13/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	0.03	0.03	0.03	< 0.01
PFHxS + PFOS	-	-		< 0.01	0.03	0.05	0.03	< 0.01
Total PFASs	-	-		ND	0.08	0.08	0.08	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 4 : Summary of Surface Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	DW6	DW7	DW8	DW9	DW10
	99%	95%	Date	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	**0.01**	**0.02**	**0.01**	**0.03**
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	0.06	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		0.02	0.02	< 0.01	0.01	0.02
Perfluorohexanoic acid-PFHxA	-	-		0.02	0.01	< 0.01	0.02	0.02
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	0.03	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 4 : Summary of Surface Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	DW6	DW7	DW8	DW9	DW10
	99%	95%	Date	12/12/2023	12/12/2023	12/12/2023	12/12/2023	12/12/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	0.01	0.05	0.01	0.03
PFHxS + PFOS	-	-		< 0.01	0.01	0.03	0.01	0.03
Total PFASs	-	-		0.04	0.04	0.12	0.04	0.07

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 4 : Summary of Surface Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2				
	Freshwater	Freshwater	Sample ID	DW11	DW12	DW13
	99%	95%	Date	13/12/2023	13/12/2023	17/04/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		0.01	0.02	0.03
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		**0.03**	**0.06**	**0.04**
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	0.06
Perfluoropentanoic acid-PFPeA	-	-		0.02	0.03	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		0.01	0.03	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	0.02	0.02
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 4 : Summary of Surface Water Analytical Data - PFAS

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2				
	Freshwater	Freshwater	Sample ID	DW11	DW12	DW13
	99%	95%	Date	13/12/2023	13/12/2023	17/04/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		0.03	0.08	0.06
PFHxS + PFOS	-	-		0.04	0.08	0.07
Total PFASs	-	-		0.07	0.17	0.15

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX103/1.1-1.2	DS1	RPD_DS1	TS1	RPD_TS1
	HILs - A	Indirect	Depth (m)	1.1-1.2	-	-	-	-
		Exposure	Date	22/08/2023	22/08/2023	-	22/08/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
– = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX103/1.1-1.2	DS1	RPD_DS1	TS1	RPD_TS1
	HILs - A	Indirect	Depth (m)	1.1-1.2	-	-	-	-
		Exposure	Date	22/08/2023	22/08/2023	-	22/08/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX104/0.1-0.2	DS2	RPD_DS2	TS2	RPD_TS2
	HILs - A	Indirect	Depth (m)	0.1-0.2	-	-	-	-
		Exposure	Date	23/08/2023	23/08/2023	-	23/08/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX104/0.1-0.2	DS2	RPD_DS2	TS2	RPD_TS2
	HILs - A	Indirect	Depth (m)	0.1-0.2	-	-	-	-
		Exposure	Date	23/08/2023	23/08/2023	-	23/08/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
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-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX117/0.3-0.4	DS1B	RPD_DS1B	TS1B	RPD_TS1B
	HILs - A	Indirect	Depth (m)	0.3-0.4	-	-	-	-
		Exposure	Date	19/10/2023	19/10/2023	-	19/10/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX117/0.3-0.4	DS1B	RPD_DS1B	TS1B	RPD_TS1B
	HILs - A	Indirect	Depth (m)	0.3-0.4	-	-	-	-
		Exposure	Date	19/10/2023	19/10/2023	-	19/10/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
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DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
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DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX118/1.0-1.1	DS2B	RPD_DS2B	TS2B	RPD_TS2B
	HILs - A	Indirect	Depth (m)	1.0-1.1	-	-	-	-
		Exposure	Date	20/10/2023	20/10/2023	-	20/10/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
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MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
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Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX118/1.0-1.1	DS2B	RPD_DS2B	TS2B	RPD_TS2B
	HILs - A	Indirect	Depth (m)	1.0-1.1	-	-	-	-
		Exposure	Date	20/10/2023	20/10/2023	-	20/10/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
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4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
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Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX121/0.4-0.5	DS3B	RPD_DS3B	TS3B	RPD_TS3B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	23/10/2023	23/10/2023	-	23/10/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX121/0.4-0.5	DS3B	RPD_DS3B	TS3B	RPD_TS3B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	23/10/2023	23/10/2023	-	23/10/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX123/0.4-0.5	DS4B	RPD_DS4B	TS4B	RPD_TS4B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	24/10/2023	24/10/2023	-	24/10/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX123/0.4-0.5	DS4B	RPD_DS4B	TS4B	RPD_TS4B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	24/10/2023	24/10/2023	-	24/10/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX135/0.4-0.5	DS5B	RPD_DS5B	TS5B	RPD_TS5B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	23/11/2023	23/11/2023	-	23/11/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
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- = assessment criteria not available
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DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
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MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
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Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX135/0.4-0.5	DS5B	RPD_DS5B	TS5B	RPD_TS5B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	23/11/2023	23/11/2023	-	23/11/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

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DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
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EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX156/0.4-0.5	DS7B	RPD_DS7B	TS7B	RPD_TS7B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	9/01/2024	9/01/2024	-	9/01/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX156/0.4-0.5	DS7B	RPD_DS7B	TS7B	RPD_TS7B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	9/01/2024	9/01/2024	-	9/01/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX163/0.4-0.5	DS9B	RPD_DS9B	TS9B	RPD_TS9B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	22/01/2024	22/01/2024	-	22/01/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX163/0.4-0.5	DS9B	RPD_DS9B	TS9B	RPD_TS9B
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	22/01/2024	22/01/2024	-	22/01/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX172/1.4-1.5	DS1C	RPD_DS1C	TS1C	RPD_TS1C
	HILs - A	Indirect	Depth (m)	1.4-1.5	-	-	-	-
		Exposure	Date	29/01/2024	29/01/2024	-	29/01/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
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MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
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Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX172/1.4-1.5	DS1C	RPD_DS1C	TS1C	RPD_TS1C
	HILs - A	Indirect	Depth (m)	1.4-1.5	-	-	-	-
		Exposure	Date	29/01/2024	29/01/2024	-	29/01/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
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DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
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nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX173/0.4-0.5	DS3C	RPD_DS3C	TS3C	RPD_TS3C
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	26/02/2024	26/02/2024	-	26/02/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX173/0.4-0.5	DS3C	RPD_DS3C	TS3C	RPD_TS3C
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	26/02/2024	26/02/2024	-	26/02/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX170/1.4-1.5	DS4C	RPD_DS4C	TS4C	RPD_TS4C
	HILs - A	Indirect	Depth (m)	1.4-1.5	-	-	-	-
		Exposure	Date	27/02/2024	27/02/2024	-	27/02/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX170/1.4-1.5	DS4C	RPD_DS4C	TS4C	RPD_TS4C
	HILs - A	Indirect	Depth (m)	1.4-1.5	-	-	-	-
		Exposure	Date	27/02/2024	27/02/2024	-	27/02/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
– = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX171/0.4-0.5	DS5C	RPD_DS5C	TS5C	RPD_TS5C
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	25/03/2024	25/03/2024	-	25/03/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonic acid-PFOS	-	10		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanoic acid-PFOA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorononanoic acid-PFNA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 5	< 5	*nc*	< 5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	GX171/0.4-0.5	DS5C	RPD_DS5C	TS5C	RPD_TS5C
	HILs - A	Indirect	Depth (m)	0.4-0.5	-	-	-	-
		Exposure	Date	25/03/2024	25/03/2024	-	25/03/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 5	< 5	*nc*	< 5	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSA	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
EtFOSE	-	-		< 5	< 5	*nc*	< 5	*nc*
MeFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
EtFOSAA	-	-		< 10	< 10	*nc*	< 10	*nc*
4:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
6:2 FTS	-	-		< 10	< 10	*nc*	< 10	*nc*
8:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
10:2 FTS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFOA + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
PFHxS + PFOS	-	-		< 5	< 5	*nc*	< 5	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	R1 21/08/23	R3 23/08/23	R5 25/08/23	R6 28/08/23	R1 19/10/23
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	21/08/2023	23/08/2023	25/08/2023	28/08/2023	19/10/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	-	10		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	R1 21/08/23	R3 23/08/23	R5 25/08/23	R6 28/08/23	R1 19/10/23
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	21/08/2023	23/08/2023	25/08/2023	28/08/2023	19/10/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
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DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
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Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	R9 2/11/23	R2 24/11/23	R5 29/11/23	R101 22/01/24	R1 24/01/24
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	2/11/2023	24/11/2023	29/11/2023	22/01/2024	24/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	-	10		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
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< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	R9 2/11/23	R2 24/11/23	R5 29/11/23	R101 22/01/24	R1 24/01/24
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	2/11/2023	24/11/2023	29/11/2023	22/01/2024	24/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
– = assessment criteria not available
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DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
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Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	R2 29/01/24	R4 30/01/24	R5 26/02/24	R8 27/02/24	R9 27/02/24
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	29/01/2024	30/01/2024	26/02/2024	27/02/2024	27/02/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	-	10		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
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DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	R2 29/01/24	R4 30/01/24	R5 26/02/24	R8 27/02/24	R9 27/02/24
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	29/01/2024	30/01/2024	26/02/2024	27/02/2024	27/02/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	RW10 25/03/24	FRB2 28/08/23	FRB1 19/10/23	BLANK 22/11/23	BLANK3 8/01/24
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	25/03/2024	28/08/2023	19/10/2023	22/11/2023	8/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	-	10		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
		EGV	Sample ID	RW10 25/03/24	FRB2 28/08/23	FRB1 19/10/23	BLANK 22/11/23	BLANK3 8/01/24
	HILs - A	Indirect	Depth (m)	-	-	-	-	-
		Exposure	Date	25/03/2024	28/08/2023	19/10/2023	22/11/2023	8/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2				
		EGV	Sample ID	BLANK1 22/01/24	BLANK 30/01/24	BLANK 27/02/24
	HILs - A	Indirect	Depth (m)	-	-	-
		Exposure	Date	22/01/2024	30/01/2024	27/02/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	-	10		< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	-	-		< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 5 : Summary of Soil Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2				
		EGV	Sample ID	BLANK1 22/01/24	BLANK 30/01/24	BLANK 27/02/24
	HILs - A	Indirect	Depth (m)	-	-	-
		Exposure	Date	22/01/2024	30/01/2024	27/02/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Interim Soil Ecological Guidance Values, Indirect Exposure.
Total concentrations in µg/kg; equipment rinsates and field reagent blank concentrations in µg/L
- = assessment criteria not available
DS1 and TS1 = duplicate and triplicate of GX103/1.1-1.2; DS2 and TS2= duplicate and triplicate of GX104/0.1-0.2
DS1B and TS1B = duplicate and triplicate of GX117/0.3-0.4; DS2B and TS2B = duplicate and triplicate of GX118/1.0-1.1
DS3B and TS3B = duplicate and triplicate of GX121/0.4-0.5; DS4B and TSB = duplicate and triplicate of GX123/0.4-0.5
DS5B and TS5B = duplicate and triplicate of GX135/0.4-0.5; DS7B and TS7B = duplicate and triplicate of GX156/0.4-0.5
DS9B and TS9B = duplicate and triplicate of GX163/0.4-0.5; DS1C and TS1C = duplicate and triplicate of GX172/1.4-1.5
DS3C and TS3C = duplicate and triplicate of GX173/0.4-0.5; DS4C and TS4C = duplicate and triplicate of GX170/1.4-1.5
DS5C and TS5C = duplicate and triplicate of GX171/0.4-0.5
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed; Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide; EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid; EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid; 6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW101	DS1 (gw)	RPD_DS1 (gw)	TS1 (gw)	RPD_TS1 (gw)
	99%	95%	Date	13/09/2023	13/09/2023	-	13/09/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW101	DS1 (gw)	RPD_DS1 (gw)	TS1 (gw)	RPD_TS1 (gw)
	99%	95%	Date	13/09/2023	13/09/2023	-	13/09/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
4:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
6:2 FTS	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
8:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
10:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFOA + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFHxS + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW118	DGW1B	RPD_DGW1B	TGW1B	RPD_TGW1B
	99%	95%	Date	10/11/2023	10/11/2023	-	10/10/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW118	DGW1B	RPD_DGW1B	TGW1B	RPD_TGW1B
	99%	95%	Date	10/11/2023	10/11/2023	-	10/10/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
4:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
6:2 FTS	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
8:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
10:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFOA + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFHxS + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street

Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW139	DS2B (gw)	RPD_DS2B (gw)	TS2B (gw)	RPD_TS2B (gw)
	99%	95%	Date	11/12/2023	11/12/2023	-	11/12/2023	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection

Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.

Total concentrations in µg/L

– = assessment criteria not available

DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101

DGW1B = duplicate of GW118; TGW1B = triplicate of GW118

DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139

DW3B = duplicate of GW150; TW3B = triplicate of GW150

DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_

DW1C = duplicate of GW166; TW1C = triplicate of GW166

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

MeFOSA = N-methylperfluoro-1-octane sulfonamide

EtFOSA = N-ethylperfluoro-1-octane sulfonamide

MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol

EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol

MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid

EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid

4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid

6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid

8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW139	DS2B (gw)	RPD_DS2B (gw)	TS2B (gw)	RPD_TS2B (gw)
	99%	95%	Date	11/12/2023	11/12/2023	-	11/12/2023	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
4:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
6:2 FTS	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
8:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
10:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFOA + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFHxS + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW150	DW3B	RPD_DW3B	TW3B	RPD_TW3B
	99%	95%	Date	23/01/2024	23/01/2024	-	23/01/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW150	DW3B	RPD_DW3B	TW3B	RPD_TW3B
	99%	95%	Date	23/01/2024	23/01/2024	-	23/01/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
4:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
6:2 FTS	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
8:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
10:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFOA + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFHxS + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street

Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW151_	DW4B_	RPD_DW4B_	TW4B	RPD_TW4B
	99%	95%	Date	21/03/2024	21/03/2024	-	21/03/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection

Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.

Total concentrations in µg/L

– = assessment criteria not available

DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101

DGW1B = duplicate of GW118; TGW1B = triplicate of GW118

DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139

DW3B = duplicate of GW150; TW3B = triplicate of GW150

DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_

DW1C = duplicate of GW166; TW1C = triplicate of GW166

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

MeFOSA = N-methylperfluoro-1-octane sulfonamide

EtFOSA = N-ethylperfluoro-1-octane sulfonamide

MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol

EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol

MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid

EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid

4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid

6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid

8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW151_	DW4B_	RPD_DW4B_	TW4B	RPD_TW4B
	99%	95%	Date	21/03/2024	21/03/2024	-	21/03/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
4:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
6:2 FTS	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
8:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
10:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFOA + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFHxS + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Total PFASs	-	-		ND	ND	*nc*	ND	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW166	DW1C	RPD_DW1C	TW1C	RPD_TW1C
	99%	95%	Date	2/04/2024	2/04/2024	-	2/04/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		0.01	0.02	*67%*	< 0.01	*nc*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	GW166	DW1C	RPD_DW1C	TW1C	RPD_TW1C
	99%	95%	Date	2/04/2024	2/04/2024	-	2/04/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
4:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
6:2 FTS	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
8:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
10:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFOA + PFOS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFHxS + PFOS	-	-		0.01	0.02	*67%*	< 0.01	*nc*
Total PFASs	-	-		0.01	0.02	*67%*	ND	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
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DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	R4 24/08/23	R8 30/08/23	R9 31/08/23	R3 24/10/23	R4 25/10/23
	99%	95%	Date	24/08/2023	30/08/2023	31/08/2023	24/10/2023	25/10/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	R4 24/08/23	R8 30/08/23	R9 31/08/23	R3 24/10/23	R4 25/10/23
	99%	95%	Date	24/08/2023	30/08/2023	31/08/2023	24/10/2023	25/10/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	R6 31/10/23	R7 1/11/23	R1 10/11/23	R2 13/11/23	R3 23/01/24
	99%	95%	Date	31/10/2023	1/11/2023	10/11/2023	13/11/2023	23/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	R6 31/10/23	R7 1/11/23	R1 10/11/23	R2 13/11/23	R3 23/01/24
	99%	95%	Date	31/10/2023	1/11/2023	10/11/2023	13/11/2023	23/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

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Total concentrations in µg/L
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DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
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MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
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MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street

Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	RW4 21/03/24	RW5 22/03/24	R3 29/01/24	R6 26/02/24	R7 27/02/24
	99%	95%	Date	21/03/2024	22/03/2024	29/01/2024	26/02/2024	27/02/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection

Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.

Total concentrations in µg/L

– = assessment criteria not available

DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101

DGW1B = duplicate of GW118; TGW1B = triplicate of GW118

DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139

DW3B = duplicate of GW150; TW3B = triplicate of GW150

DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_

DW1C = duplicate of GW166; TW1C = triplicate of GW166

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

MeFOSA = N-methylperfluoro-1-octane sulfonamide

EtFOSA = N-ethylperfluoro-1-octane sulfonamide

MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol

EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol

MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid

EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid

4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid

6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid

8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	RW4 21/03/24	RW5 22/03/24	R3 29/01/24	R6 26/02/24	R7 27/02/24
	99%	95%	Date	21/03/2024	22/03/2024	29/01/2024	26/02/2024	27/02/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
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Total concentrations in µg/L
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Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	RW1 2/04/24	RW2 2/04/24	RW3 3/4/24	FRB1 13/09/23	FRB1 10/11/23
	99%	95%	Date	2/04/2024	2/04/2024	3/04/2024	13/09/2023	10/11/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

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Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
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nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	RW1 2/04/24	RW2 2/04/24	RW3 3/4/24	FRB1 13/09/23	FRB1 10/11/23
	99%	95%	Date	2/04/2024	2/04/2024	3/04/2024	13/09/2023	10/11/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
	Freshwater	Freshwater	Sample ID	FRB1 11/12/23	BLANK2 22/01/24	BLANK3 21/03/24	BLANK 2/04/24	STOCK
	99%	95%	Date	11/12/2023	22/01/2024	21/03/2024	2/04/2024	12/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
- = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

Geo-Logix

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2					
	Freshwater	Freshwater	Sample ID	FRB1 11/12/23	BLANK2 22/01/24	BLANK3 21/03/24	BLANK 2/04/24	STOCK
	99%	95%	Date	11/12/2023	22/01/2024	21/03/2024	2/04/2024	12/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
	Freshwater	Freshwater	Sample ID	STORE
	99%	95%	Date	12/01/2024
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 6 : Summary of Groundwater Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2		
	Freshwater	Freshwater	Sample ID	STORE
	99%	95%	Date	12/01/2024
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05
MeFOSA	-	-		< 0.05
EtFOSA	-	-		< 0.05
MeFOSE	-	-		< 0.05
EtFOSE	-	-		< 0.05
MeFOSAA	-	-		< 0.05
EtFOSAA	-	-		< 0.05
4:2 FTS	-	-		< 0.01
6:2 FTS	-	-		< 0.05
8:2 FTS	-	-		< 0.01
10:2 FTS	-	-		< 0.01
PFOA + PFOS	-	-		< 0.01
PFHxS + PFOS	-	-		< 0.01
Total PFASs	-	-		ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DS1 (gw) = duplicate of GW101; TS1 (gw) = triplicate of GW101
DGW1B = duplicate of GW118; TGW1B = triplicate of GW118
DS2B (gw) = duplicate of GW139; TS2B (gw) = triplicate of GW139
DW3B = duplicate of GW150; TW3B = triplicate of GW150
DW4B_ = duplicate of GW151_; TW4B = triplicate of GW151_
DW1C = duplicate of GW166; TW1C = triplicate of GW166
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid; 10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 7 : Summary of Surface Water Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	DW13	DW2C	RPD_DW2C	TW2C	RPD_TW2C
	99%	95%	Date	17/04/2024	17/04/2024	-	17/04/2024	-
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanesulfonic acid-PFHxS	-	-		0.03	0.04	*29%*	0.03	*0%*
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		**0.04**	**0.04**	*0%*	**0.03**	*29%*
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorobutanoic acid-PFBA	-	-		0.06	0.08	*29%*	0.06	*0%*
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanoic acid-PFOA	19	220		0.02	0.03	*40%*	0.02	*0%*
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DW2C = duplicate of DW13
TW2C = triplicate of DW13
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 7 : Summary of Surface Water Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2						
	Freshwater	Freshwater	Sample ID	DW13	DW2C	RPD_DW2C	TW2C	RPD_TW2C
	99%	95%	Date	17/04/2024	17/04/2024	-	17/04/2024	-
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSE	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
MeFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
EtFOSAA	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
4:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
6:2 FTS	-	-		< 0.05	< 0.05	*nc*	< 0.05	*nc*
8:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
10:2 FTS	-	-		< 0.01	< 0.01	*nc*	< 0.01	*nc*
PFOA + PFOS	-	-		0.06	0.07	*15%*	0.05	*18%*
PFHxS + PFOS	-	-		0.07	0.08	*13%*	0.06	*15%*
Total PFASs	-	-		0.15	0.19	*24%*	0.14	*7%*

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DW2C = duplicate of DW13
TW2C = triplicate of DW13
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 7 : Summary of Surface Water Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2				
	Freshwater	Freshwater	Sample ID	FRB1 13/09/23	FRB1 10/11/23	FRB1 11/12/23
	99%	95%	Date	13/09/2023	10/11/2023	11/12/2023
Perfluoropropanesulfonic acid-PFPrS	-	-		< 0.01	< 0.01	< 0.01
Perfluorobutanesulfonic acid-PFBS	-	-		< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid-PFPeS	-	-		< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid-PFHxS	-	-		< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid-PFHp	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid-PFOS	0.00023	0.13		< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid-PFNS	-	-		--	--	--
Perfluorodecanesulfonic acid-PFDS	-	-		< 0.01	< 0.01	< 0.01
Perfluorobutanoic acid-PFBA	-	-		< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid-PFPeA	-	-		< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid-PFHxA	-	-		< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid-PFHpA	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid-PFOA	19	220		< 0.01	< 0.01	< 0.01
Perfluorononanoic acid-PFNA	-	-		< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid-PFDA	-	-		< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid-PFUnA	-	-		< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid-PFDoA	-	-		< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid-PFTrDA	-	-		< 0.01	< 0.01	< 0.01

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DW2C = duplicate of DW13
TW2C = triplicate of DW13
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

Table 7 : Summary of Surface Water Analytical Data - PFAS (QAQC)

PFAS Environmental Site Assessment – Privileged and Confidential

Project No.: 2301034 WSU

2 College Street
Richmond, NSW

	Criteria 1	Criteria 2				
	Freshwater	Freshwater	Sample ID	FRB1 13/09/23	FRB1 10/11/23	FRB1 11/12/23
	99%	95%	Date	13/09/2023	10/11/2023	11/12/2023
Perfluorotetradecanoic acid-PFTeDA	-	-		< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonamide-PFOSA	-	-		< 0.05	< 0.05	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01
PFHxS + PFOS	-	-		< 0.01	< 0.01	< 0.01
Total PFASs	-	-		ND	ND	ND

Notes:

Criteria 1 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 99% Species Protection
Criteria 2 = PFAS NEMP 2.0 (HEPA 2020) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.
Total concentrations in µg/L
– = assessment criteria not available
DW2C = duplicate of DW13
TW2C = triplicate of DW13
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria
MeFOSA = N-methylperfluoro-1-octane sulfonamide
EtFOSA = N-ethylperfluoro-1-octane sulfonamide
MeFOSE = 2-(N-methylperfluoro-1-octane sulfonamido)-ethanol
EtFOSE = 2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol
MeFOSAA = N-methyl-perfluorooctanesulfonamidoacetic acid
EtFOSAA = N-ethyl-perfluorooctanesulfonamidoacetic acid
4:2 FTS = 1H.1H.2H.2H-perfluorohexanesulfonic acid
6:2 FTS = 1H.1H.2H.2H-perfluorooctanesulfonic acid
8:2 FTS = 1H.1H.2H.2H-perfluorodecanesulfonic acid
10:2 FTS = 1H.1H.2H.2H-perfluorododecanesulfonic acid

APPENDIX O

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Sarah Bolton**

Report **1022861-S**
Project name RICHMOND
Received Date Sep 04, 2023

Client Sample ID			**GX101/0.2-0.3**	**GX101/1.0-1.1**	**GX102/0.1-0.2**	**GX102/1.0-1.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S23-Se0006215**	**S23-Se0006216**	**S23-Se0006217**	**S23-Se0006218**
Date Sampled			**Aug 21, 2023**	**Aug 21, 2023**	**Aug 21, 2023**	**Aug 21, 2023**
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	27	27	12	27
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	101	95	99	91
13C5-PFPeA (surr.)	1	%	103	105	101	91
13C5-PFHxA (surr.)	1	%	108	100	104	92
13C4-PFHpA (surr.)	1	%	98	99	100	96
13C8-PFOA (surr.)	1	%	94	88	100	87
13C5-PFNA (surr.)	1	%	99	102	97	97
13C6-PFDA (surr.)	1	%	106	104	102	105
13C2-PFUnDA (surr.)	1	%	108	97	108	105
13C2-PFDoDA (surr.)	1	%	104	101	107	88
13C2-PFTeDA (surr.)	1	%	113	106	116	106
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	101	91	102	99
D3-N-MeFOSA (surr.)	1	%	90	89	104	88

Client Sample ID			GX101/0.2-0.3	GX101/1.0-1.1	GX102/0.1-0.2	GX102/1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006215	S23-Se0006216	S23-Se0006217	S23-Se0006218
Date Sampled			Aug 21, 2023	Aug 21, 2023	Aug 21, 2023	Aug 21, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	110	118	116	109
D7-N-MeFOSE (surr.)	1	%	96	95	99	100
D9-N-EtFOSE (surr.)	1	%	102	101	100	101
D5-N-EtFOSAA (surr.)	1	%	105	84	106	71
D3-N-MeFOSAA (surr.)	1	%	92	79	101	65
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	108	107	102	104
18O2-PFHxS (surr.)	1	%	104	102	106	95
13C8-PFOS (surr.)	1	%	121	107	114	113
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	91	98	77	79
13C2-6:2 FTSA (surr.)	1	%	97	83	91	89
13C2-8:2 FTSA (surr.)	1	%	95	81	106	89
13C2-10:2 FTSA (surr.)	1	%	121	124	99	132
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX103/0.0-0.1	GX103/1.1-1.2	GX104/0.1-0.2	GX104/1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006219	S23-Se0006220	S23-Se0006221	S23-Se0006222
Date Sampled			Aug 22, 2023	Aug 22, 2023	Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	21	19	10	8.9
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5

Client Sample ID			GX103/0.0-0.1	GX103/1.1-1.2	GX104/0.1-0.2	GX104/1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006219	S23-Se0006220	S23-Se0006221	S23-Se0006222
Date Sampled			Aug 22, 2023	Aug 22, 2023	Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	96	102	104	97
13C5-PFPeA (surr.)	1	%	100	94	105	100
13C5-PFHxA (surr.)	1	%	112	102	109	105
13C4-PFHpA (surr.)	1	%	106	102	95	85
13C8-PFOA (surr.)	1	%	99	93	92	85
13C5-PFNA (surr.)	1	%	103	101	91	88
13C6-PFDA (surr.)	1	%	108	103	107	98
13C2-PFUnDA (surr.)	1	%	101	105	112	98
13C2-PFDoDA (surr.)	1	%	104	104	106	104
13C2-PFTeDA (surr.)	1	%	108	115	118	106
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	100	95	108	91
D3-N-MeFOSA (surr.)	1	%	91	94	93	93
D5-N-EtFOSA (surr.)	1	%	107	110	123	119
D7-N-MeFOSE (surr.)	1	%	90	94	105	94
D9-N-EtFOSE (surr.)	1	%	101	102	104	91
D5-N-EtFOSAA (surr.)	1	%	99	96	94	85
D3-N-MeFOSAA (surr.)	1	%	90	102	94	82
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	104	109	105	105
18O2-PFHxS (surr.)	1	%	106	105	109	108
13C8-PFOS (surr.)	1	%	111	115	113	106

Client Sample ID			GX103/0.0-0.1	GX103/1.1-1.2	GX104/0.1-0.2	GX104/1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006219	S23-Se0006220	S23-Se0006221	S23-Se0006222
Date Sampled			Aug 22, 2023	Aug 22, 2023	Aug 23, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	76	78	87	117
13C2-6:2 FTSA (surr.)	1	%	87	85	92	95
13C2-8:2 FTSA (surr.)	1	%	100	88	85	77
13C2-10:2 FTSA (surr.)	1	%	108	104	136	109
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX105/0.3-0.4	GX105/1.0-1.1	GX106/0.2-0.3	GX106/0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006223	S23-Se0006224	S23-Se0006225	S23-Se0006226
Date Sampled			Aug 23, 2023	Aug 23, 2023	Aug 24, 2023	Aug 24, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	25	21	28	35
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	96	98	98	98
13C5-PFPeA (surr.)	1	%	96	96	102	104
13C5-PFHxA (surr.)	1	%	96	98	102	110
13C4-PFHpA (surr.)	1	%	92	103	92	105
13C8-PFOA (surr.)	1	%	89	90	87	91
13C5-PFNA (surr.)	1	%	104	100	95	97
13C6-PFDA (surr.)	1	%	103	108	104	105
13C2-PFUnDA (surr.)	1	%	101	111	105	115
13C2-PFDoDA (surr.)	1	%	106	116	110	111
13C2-PFTeDA (surr.)	1	%	112	109	111	115

Client Sample ID			GX105/0.3-0.4	GX105/1.0-1.1	GX106/0.2-0.3	GX106/0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006223	S23-Se0006224	S23-Se0006225	S23-Se0006226
Date Sampled			Aug 23, 2023	Aug 23, 2023	Aug 24, 2023	Aug 24, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	96	99	91	93
D3-N-MeFOSA (surr.)	1	%	88	88	91	98
D5-N-EtFOSA (surr.)	1	%	105	111	106	116
D7-N-MeFOSE (surr.)	1	%	101	99	98	95
D9-N-EtFOSE (surr.)	1	%	95	104	98	100
D5-N-EtFOSAA (surr.)	1	%	123	104	90	121
D3-N-MeFOSAA (surr.)	1	%	93	97	102	108
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	105	108	114	110
18O2-PFHxS (surr.)	1	%	102	102	98	102
13C8-PFOS (surr.)	1	%	112	119	112	114
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	95	96	99	86
13C2-6:2 FTSA (surr.)	1	%	80	108	97	97
13C2-8:2 FTSA (surr.)	1	%	79	83	108	107
13C2-10:2 FTSA (surr.)	1	%	106	96	97	134
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX107/0.0-0.1	GX107/1.1-1.2	GX108/0.3-0.4	GX108/1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006227	S23-Se0006228	S23-Se0006229	S23-Se0006230
Date Sampled			Aug 24, 2023	Aug 24, 2023	Aug 25, 2023	Aug 25, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	18	25	18	23
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	99	97	95	99
13C5-PFPeA (surr.)	1	%	108	99	98	102
13C5-PFHxA (surr.)	1	%	100	100	103	105
13C4-PFHpA (surr.)	1	%	105	100	104	96
13C8-PFOA (surr.)	1	%	96	92	97	95
13C5-PFNA (surr.)	1	%	107	97	111	97
13C6-PFDA (surr.)	1	%	109	104	108	107
13C2-PFUnDA (surr.)	1	%	117	103	113	114
13C2-PFDoDA (surr.)	1	%	113	111	95	103
13C2-PFTeDA (surr.)	1	%	123	119	111	117
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	100	101	89	95
D3-N-MeFOSA (surr.)	1	%	89	96	89	100
D5-N-EtFOSA (surr.)	1	%	120	116	115	115
D7-N-MeFOSE (surr.)	1	%	100	99	94	93
D9-N-EtFOSE (surr.)	1	%	102	103	100	102
D5-N-EtFOSAA (surr.)	1	%	107	100	105	101
D3-N-MeFOSAA (surr.)	1	%	107	104	93	86
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5

Client Sample ID			GX107/0.0-0.1	GX107/1.1-1.2	GX108/0.3-0.4	GX108/1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006227	S23-Se0006228	S23-Se0006229	S23-Se0006230
Date Sampled			Aug 24, 2023	Aug 24, 2023	Aug 25, 2023	Aug 25, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	118	102	105	112
18O2-PFHxS (surr.)	1	%	111	105	101	105
13C8-PFOS (surr.)	1	%	112	110	109	113
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	99	83	99	116
13C2-6:2 FTSA (surr.)	1	%	111	83	90	101
13C2-8:2 FTSA (surr.)	1	%	79	92	79	84
13C2-10:2 FTSA (surr.)	1	%	139	129	127	133
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX109/0.1-0.2	GX109/0.9-1.0	GX110/0.2-0.3	GX110/0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006231	S23-Se0006232	S23-Se0006233	S23-Se0006234
Date Sampled			Aug 28, 2023	Aug 28, 2023	Aug 28, 2023	Aug 28, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	18	3.5	26	25
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	99	106	95	101
13C5-PFPeA (surr.)	1	%	101	107	92	104
13C5-PFHxA (surr.)	1	%	105	117	102	103
13C4-PFHpA (surr.)	1	%	96	99	91	97
13C8-PFOA (surr.)	1	%	88	102	84	94
13C5-PFNA (surr.)	1	%	94	109	91	97

Client Sample ID			GX109/0.1-0.2	GX109/0.9-1.0	GX110/0.2-0.3	GX110/0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006231	S23-Se0006232	S23-Se0006233	S23-Se0006234
Date Sampled			Aug 28, 2023	Aug 28, 2023	Aug 28, 2023	Aug 28, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C6-PFDA (surr.)	1	%	106	118	101	113
13C2-PFUnDA (surr.)	1	%	107	121	114	119
13C2-PFDoDA (surr.)	1	%	107	125	103	107
13C2-PFTeDA (surr.)	1	%	109	117	110	116
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	94	104	91	98
D3-N-MeFOSA (surr.)	1	%	94	108	89	105
D5-N-EtFOSA (surr.)	1	%	117	118	120	108
D7-N-MeFOSE (surr.)	1	%	101	98	88	99
D9-N-EtFOSE (surr.)	1	%	98	108	98	98
D5-N-EtFOSAA (surr.)	1	%	101	119	93	118
D3-N-MeFOSAA (surr.)	1	%	94	111	96	121
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	109	115	105	109
18O2-PFHxS (surr.)	1	%	107	106	104	112
13C8-PFOS (surr.)	1	%	109	115	108	120
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	87	83	86	88
13C2-6:2 FTSA (surr.)	1	%	102	95	91	77
13C2-8:2 FTSA (surr.)	1	%	97	103	80	93
13C2-10:2 FTSA (surr.)	1	%	126	192	134	163

Client Sample ID			GX109/0.1-0.2	GX109/0.9-1.0	GX110/0.2-0.3	GX110/0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006231	S23-Se0006232	S23-Se0006233	S23-Se0006234
Date Sampled			Aug 28, 2023	Aug 28, 2023	Aug 28, 2023	Aug 28, 2023
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX111/0.1-0.2	GX111/1.3-1.4	GX112/0.1-0.2	GX112/1.7-1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006235	S23-Se0006236	S23-Se0006237	S23-Se0006238
Date Sampled			Aug 29, 2023	Aug 29, 2023	Aug 30, 2023	Aug 30, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	4.6	8.7	6.0	6.0
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	99	96	98	102
13C5-PFPeA (surr.)	1	%	105	100	101	101
13C5-PFHxA (surr.)	1	%	102	97	98	104
13C4-PFHpA (surr.)	1	%	102	100	101	109
13C8-PFOA (surr.)	1	%	99	92	98	98
13C5-PFNA (surr.)	1	%	97	101	97	98
13C6-PFDA (surr.)	1	%	120	110	108	110
13C2-PFUnDA (surr.)	1	%	118	109	110	113
13C2-PFDoDA (surr.)	1	%	112	115	112	102
13C2-PFTeDA (surr.)	1	%	116	115	112	114
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	105	91	103	104

Client Sample ID			GX111/0.1-0.2	GX111/1.3-1.4	GX112/0.1-0.2	GX112/1.7-1.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006235	S23-Se0006236	S23-Se0006237	S23-Se0006238
Date Sampled			Aug 29, 2023	Aug 29, 2023	Aug 30, 2023	Aug 30, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	104	100	101	92
D5-N-EtFOSA (surr.)	1	%	131	109	114	129
D7-N-MeFOSE (surr.)	1	%	99	97	98	101
D9-N-EtFOSE (surr.)	1	%	98	101	108	100
D5-N-EtFOSAA (surr.)	1	%	109	102	89	103
D3-N-MeFOSAA (surr.)	1	%	114	95	67	90
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	109	110	106	116
18O2-PFHxS (surr.)	1	%	107	104	107	106
13C8-PFOS (surr.)	1	%	114	110	115	120
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	95	90	79	82
13C2-6:2 FTSA (surr.)	1	%	91	88	82	92
13C2-8:2 FTSA (surr.)	1	%	87	78	85	92
13C2-10:2 FTSA (surr.)	1	%	163	174	161	170
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX113/0.4-0.5	GX113/0.9-1.0	GX114/0.1-0.2	GX114/1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006239	S23-Se0006240	S23-Se0006241	S23-Se0006242
Date Sampled			Aug 30, 2023	Aug 30, 2023	Aug 31, 2023	Aug 31, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	12	12	8.5	13

Client Sample ID			GX113/0.4-0.5	GX113/0.9-1.0	GX114/0.1-0.2	GX114/1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006239	S23-Se0006240	S23-Se0006241	S23-Se0006242
Date Sampled			Aug 30, 2023	Aug 30, 2023	Aug 31, 2023	Aug 31, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	98	94	100	105
13C5-PFPeA (surr.)	1	%	101	102	104	107
13C5-PFHxA (surr.)	1	%	99	94	109	115
13C4-PFHpA (surr.)	1	%	92	106	103	98
13C8-PFOA (surr.)	1	%	93	85	89	97
13C5-PFNA (surr.)	1	%	87	89	90	112
13C6-PFDA (surr.)	1	%	107	111	105	121
13C2-PFUnDA (surr.)	1	%	109	113	112	120
13C2-PFDoDA (surr.)	1	%	106	108	108	121
13C2-PFTeDA (surr.)	1	%	123	111	111	120
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	95	97	103	97
D3-N-MeFOSA (surr.)	1	%	100	100	106	105
D5-N-EtFOSA (surr.)	1	%	110	113	117	110
D7-N-MeFOSE (surr.)	1	%	97	100	91	97
D9-N-EtFOSE (surr.)	1	%	98	98	102	107
D5-N-EtFOSAA (surr.)	1	%	107	96	107	112
D3-N-MeFOSAA (surr.)	1	%	85	81	113	122
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	107	105	104	113

Client Sample ID			GX113/0.4-0.5	GX113/0.9-1.0	GX114/0.1-0.2	GX114/1.0-1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006239	S23-Se0006240	S23-Se0006241	S23-Se0006242
Date Sampled			Aug 30, 2023	Aug 30, 2023	Aug 31, 2023	Aug 31, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
18O2-PFHxS (surr.)	1	%	108	106	102	109
13C8-PFOS (surr.)	1	%	112	115	113	127
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	114	85	95	92
13C2-6:2 FTSA (surr.)	1	%	89	97	103	103
13C2-8:2 FTSA (surr.)	1	%	87	87	108	101
13C2-10:2 FTSA (surr.)	1	%	146	139	164	154
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX115/0.0-0.1	GX115/0.9-1.0	DS1	DS2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006243	S23-Se0006244	S23-Se0006245	S23-Se0006246
Date Sampled			Aug 31, 2023	Aug 31, 2023	Aug 22, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	26	25	14	19
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	96	98	110	101
13C5-PFPeA (surr.)	1	%	96	100	108	107
13C5-PFHxA (surr.)	1	%	99	98	110	102
13C4-PFHpA (surr.)	1	%	97	95	109	106
13C8-PFOA (surr.)	1	%	92	90	102	90
13C5-PFNA (surr.)	1	%	93	89	101	99
13C6-PFDA (surr.)	1	%	99	106	114	104
13C2-PFUnDA (surr.)	1	%	108	111	117	108

Client Sample ID			GX115/0.0-0.1	GX115/0.9-1.0	DS1	DS2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Se0006243	S23-Se0006244	S23-Se0006245	S23-Se0006246
Date Sampled			Aug 31, 2023	Aug 31, 2023	Aug 22, 2023	Aug 23, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C2-PFDoDA (surr.)	1	%	109	108	129	110
13C2-PFTeDA (surr.)	1	%	109	113	119	111
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	95	92	103	94
D3-N-MeFOSA (surr.)	1	%	89	91	116	98
D5-N-EtFOSA (surr.)	1	%	116	110	118	122
D7-N-MeFOSE (surr.)	1	%	97	93	105	92
D9-N-EtFOSE (surr.)	1	%	101	94	105	95
D5-N-EtFOSAA (surr.)	1	%	104	97	110	111
D3-N-MeFOSAA (surr.)	1	%	109	101	106	112
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	106	98	116	98
18O2-PFHxS (surr.)	1	%	100	103	107	99
13C8-PFOS (surr.)	1	%	109	113	121	124
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	89	77	117	93
13C2-6:2 FTSA (surr.)	1	%	82	79	93	101
13C2-8:2 FTSA (surr.)	1	%	97	81	99	84
13C2-10:2 FTSA (surr.)	1	%	133	132	165	142
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Sep 05, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Sep 05, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Sep 05, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Sep 05, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Sep 05, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Sep 05, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Site# 2370

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND

Order No.: PO6044
Report #: 1022861
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 4, 2023 12:34 PM
Due: Sep 11, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX101/0.2-0.3	Aug 21, 2023		Soil	S23-Se0006215		X	X
2	GX101/1.0-1.1	Aug 21, 2023		Soil	S23-Se0006216		X	X
3	GX102/0.1-0.2	Aug 21, 2023		Soil	S23-Se0006217		X	X
4	GX102/1.0-1.1	Aug 21, 2023		Soil	S23-Se0006218		X	X
5	GX103/0.0-0.1	Aug 22, 2023		Soil	S23-Se0006219		X	X
6	GX103/1.1-1.2	Aug 22, 2023		Soil	S23-Se0006220		X	X
7	GX104/0.1-0.2	Aug 23, 2023		Soil	S23-Se0006221		X	X
8	GX104/1.1-1.2	Aug 23, 2023		Soil	S23-Se0006222		X	X
9	GX105/0.3-0.4	Aug 23, 2023		Soil	S23-Se0006223		X	X
10	GX105/1.0-1.1	Aug 23, 2023		Soil	S23-Se0006224		X	X
11	GX106/0.2-0.3	Aug 24, 2023		Soil	S23-Se0006225		X	X
12	GX106/0.9-1.0	Aug 24, 2023		Soil	S23-Se0006226		X	X
13	GX107/0.0-0.1	Aug 24, 2023		Soil	S23-Se0006227		X	X
14	GX107/1.1-1.2	Aug 24, 2023		Soil	S23-Se0006228		X	X

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Eurofins Environment Testing Australia Pty Ltd
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Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND

Order No.: PO6044
Report #: 1022861
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 4, 2023 12:34 PM
Due: Sep 11, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
15	GX108/0.3-0.4	Aug 25, 2023		Soil	S23-Se0006229		X	X
16	GX108/1.0-1.1	Aug 25, 2023		Soil	S23-Se0006230		X	X
17	GX109/0.1-0.2	Aug 28, 2023		Soil	S23-Se0006231		X	X
18	GX109/0.9-1.0	Aug 28, 2023		Soil	S23-Se0006232		X	X
19	GX110/0.2-0.3	Aug 28, 2023		Soil	S23-Se0006233		X	X
20	GX110/0.9-1.0	Aug 28, 2023		Soil	S23-Se0006234		X	X
21	GX111/0.1-0.2	Aug 29, 2023		Soil	S23-Se0006235		X	X
22	GX111/1.3-1.4	Aug 29, 2023		Soil	S23-Se0006236		X	X
23	GX112/0.1-0.2	Aug 30, 2023		Soil	S23-Se0006237		X	X
24	GX112/1.7-1.8	Aug 30, 2023		Soil	S23-Se0006238		X	X
25	GX113/0.4-0.5	Aug 30, 2023		Soil	S23-Se0006239		X	X
26	GX113/0.9-1.0	Aug 30, 2023		Soil	S23-Se0006240		X	X
27	GX114/0.1-0.2	Aug 31, 2023		Soil	S23-Se0006241		X	X
28	GX114/1.0-1.1	Aug 31, 2023		Soil	S23-Se0006242		X	X
29	GX115/0.0-0.1	Aug 31, 2023		Soil	S23-Se0006243		X	X
30	GX115/0.9-1.0	Aug 31, 2023		Soil	S23-Se0006244		X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND

Order No.: PO6044
Report #: 1022861
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 4, 2023 12:34 PM
Due: Sep 11, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
31	DS1	Aug 22, 2023		Soil	S23-Se0006245		X	X
32	DS2	Aug 23, 2023		Soil	S23-Se0006246		X	X
33	R1	Aug 21, 2023		Water	S23-Se0006247			X
34	R3	Aug 23, 2023		Water	S23-Se0006248			X
35	R4	Aug 24, 2023		Water	S23-Se0006249			X
36	R5	Aug 25, 2023		Water	S23-Se0006250			X
37	R6	Aug 28, 2023		Water	S23-Se0006251			X
38	R8	Aug 30, 2023		Water	S23-Se0006252			X
39	R9	Aug 31, 2023		Water	S23-Se0006253			X
40	FRB2	Aug 28, 2023		Water	S23-Se0006254			X
41	GX101/2.0-2.1	Aug 21, 2023		Soil	S23-Se0006257	X		
42	GX103/1.5-1.6	Aug 22, 2023		Soil	S23-Se0006258	X		
43	GX104/1.5-1.6	Aug 23, 2023		Soil	S23-Se0006259	X		
44	GX105/1.9-2.0	Aug 23, 2023		Soil	S23-Se0006260	X		
45	GX106/1.4-1.5	Aug 24, 2023		Soil	S23-Se0006261	X		
46	GX107/1.5-1.6	Aug 24, 2023		Soil	S23-Se0006262	X		

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VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND

Order No.: PO6044
Report #: 1022861
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 4, 2023 12:34 PM
Due: Sep 11, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
47	GX108/1.9-2.0	Aug 25, 2023		Soil	S23-Se0006263	X		
48	GX109/1.2-1.3	Aug 28, 2023		Soil	S23-Se0006264	X		
49	GX110/1.5-1.6	Aug 28, 2023		Soil	S23-Se0006265	X		
50	GX111/1.9-2.0	Aug 29, 2023		Soil	S23-Se0006266	X		
51	GX113/1.9-2.0	Aug 30, 2023		Soil	S23-Se0006267	X		
52	GX115/1.6-1.7	Aug 31, 2023		Soil	S23-Se0006268	X		
53	R2	Aug 22, 2023		Water	S23-Se0006269	X		
54	R7	Aug 29, 2023		Water	S23-Se0006270	X		
55	FRB1	Aug 21, 2023		Water	S23-Se0006271	X		
Test Counts						15	32	40

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	106			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	103			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	109			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	108			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	120			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	108			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	106			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	105			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	85			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	117			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	105			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	108			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	116			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	106			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	111			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	102			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	100			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	88			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	96			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	86			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	121			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	104			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-Se0006232	CP	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0006232	CP	%	109			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Se0006232	CP	%	113			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0006232	CP	%	102			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0006232	CP	%	110			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0006232	CP	%	107			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0006232	CP	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0006232	CP	%	114			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0006232	CP	%	125			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Se0006232	CP	%	105			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0006232	CP	%	102			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-Se0006232	CP	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0006232	CP	%	109			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0006232	CP	%	99			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0006232	CP	%	105			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0006232	CP	%	99			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0006232	CP	%	114			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0006232	CP	%	118			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-Se0006232	CP	%	108			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0006232	CP	%	119			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0006232	CP	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0006232	CP	%	101			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Se0006232	CP	%	104			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0006232	CP	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Se0006232	CP	%	104			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-Se0006232	CP	%	106			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0006232	CP	%	118			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0006232	CP	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0006232	CP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0006232	CP	%	94			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Se0006218	CP	%	27	27	2.4	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0006231	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0006231	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0006231	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0006231	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Se0006238	CP	%	6.0	6.0	<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:

Asim Khan Analytical Services Manager



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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Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Sarah Bolton**

Report **1022861-W**
Project name RICHMOND
Received Date Sep 04, 2023

Client Sample ID			**R1**	**R3**	**R4**	**R5**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-Se0006247**	**S23-Se0006248**	**S23-Se0006249**	**S23-Se0006250**
Date Sampled			**Aug 21, 2023**	**Aug 23, 2023**	**Aug 24, 2023**	**Aug 25, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	103	93	92	91
13C5-PFPeA (surr.)	1	%	114	99	104	101
13C5-PFHxA (surr.)	1	%	113	101	103	101
13C4-PFHpA (surr.)	1	%	109	98	97	98
13C8-PFOA (surr.)	1	%	106	97	95	95
13C5-PFNA (surr.)	1	%	105	94	96	96
13C6-PFDA (surr.)	1	%	108	100	101	99
13C2-PFUnDA (surr.)	1	%	100	98	97	102
13C2-PFDoDA (surr.)	1	%	105	100	103	104
13C2-PFTeDA (surr.)	1	%	94	102	98	103
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	114	103	100	101
D3-N-MeFOSA (surr.)	1	%	102	93	98	91
D5-N-EtFOSA (surr.)	1	%	111	108	105	99
D7-N-MeFOSE (surr.)	1	%	93	87	89	91

Client Sample ID			R1	R3	R4	R5
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0006247	S23-Se0006248	S23-Se0006249	S23-Se0006250
Date Sampled			Aug 21, 2023	Aug 23, 2023	Aug 24, 2023	Aug 25, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D9-N-EtFOSE (surr.)	1	%	103	98	94	92
D5-N-EtFOSAA (surr.)	1	%	99	94	97	87
D3-N-MeFOSAA (surr.)	1	%	108	94	88	90
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	117	110	113	110
18O2-PFHxS (surr.)	1	%	132	120	116	112
13C8-PFOS (surr.)	1	%	115	110	103	104
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	103	88	87	85
13C2-6:2 FTSA (surr.)	1	%	97	101	80	88
13C2-8:2 FTSA (surr.)	1	%	106	91	95	97
13C2-10:2 FTSA (surr.)	1	%	114	105	110	99
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			R6	R8	R9	FRB2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0006251	S23-Se0006252	S23-Se0006253	S23-Se0006254
Date Sampled			Aug 28, 2023	Aug 30, 2023	Aug 31, 2023	Aug 28, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			R6	R8	R9	FRB2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0006251	S23-Se0006252	S23-Se0006253	S23-Se0006254
Date Sampled			Aug 28, 2023	Aug 30, 2023	Aug 31, 2023	Aug 28, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	103	85	88	101
13C5-PFPeA (surr.)	1	%	109	93	94	103
13C5-PFHxA (surr.)	1	%	111	88	94	112
13C4-PFHpA (surr.)	1	%	108	91	91	103
13C8-PFOA (surr.)	1	%	104	88	94	99
13C5-PFNA (surr.)	1	%	103	82	89	99
13C6-PFDA (surr.)	1	%	102	89	91	104
13C2-PFUnDA (surr.)	1	%	96	86	90	100
13C2-PFDoDA (surr.)	1	%	100	89	91	104
13C2-PFTeDA (surr.)	1	%	84	93	98	94
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	104	96	91	108
D3-N-MeFOSA (surr.)	1	%	93	84	69	91
D5-N-EtFOSA (surr.)	1	%	108	93	94	102
D7-N-MeFOSE (surr.)	1	%	94	80	87	88
D9-N-EtFOSE (surr.)	1	%	101	83	87	97
D5-N-EtFOSAA (surr.)	1	%	94	80	87	101
D3-N-MeFOSAA (surr.)	1	%	99	82	92	94
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	115	98	100	113
18O2-PFHxS (surr.)	1	%	129	102	109	122
13C8-PFOS (surr.)	1	%	113	92	105	106

Client Sample ID			R6	R8	R9	FRB2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0006251	S23-Se0006252	S23-Se0006253	S23-Se0006254
Date Sampled			Aug 28, 2023	Aug 30, 2023	Aug 31, 2023	Aug 28, 2023
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	101	76	84	88
13C2-6:2 FTSA (surr.)	1	%	102	79	86	93
13C2-8:2 FTSA (surr.)	1	%	116	84	89	98
13C2-10:2 FTSA (surr.)	1	%	116	90	97	87
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Sep 06, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Sep 06, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Sep 05, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Sep 05, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Sep 05, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND

Order No.: PO6044
Report #: 1022861
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 4, 2023 12:34 PM
Due: Sep 11, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX101/0.2-0.3	Aug 21, 2023		Soil	S23-Se0006215		X	X
2	GX101/1.0-1.1	Aug 21, 2023		Soil	S23-Se0006216		X	X
3	GX102/0.1-0.2	Aug 21, 2023		Soil	S23-Se0006217		X	X
4	GX102/1.0-1.1	Aug 21, 2023		Soil	S23-Se0006218		X	X
5	GX103/0.0-0.1	Aug 22, 2023		Soil	S23-Se0006219		X	X
6	GX103/1.1-1.2	Aug 22, 2023		Soil	S23-Se0006220		X	X
7	GX104/0.1-0.2	Aug 23, 2023		Soil	S23-Se0006221		X	X
8	GX104/1.1-1.2	Aug 23, 2023		Soil	S23-Se0006222		X	X
9	GX105/0.3-0.4	Aug 23, 2023		Soil	S23-Se0006223		X	X
10	GX105/1.0-1.1	Aug 23, 2023		Soil	S23-Se0006224		X	X
11	GX106/0.2-0.3	Aug 24, 2023		Soil	S23-Se0006225		X	X
12	GX106/0.9-1.0	Aug 24, 2023		Soil	S23-Se0006226		X	X
13	GX107/0.0-0.1	Aug 24, 2023		Soil	S23-Se0006227		X	X
14	GX107/1.1-1.2	Aug 24, 2023		Soil	S23-Se0006228		X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND

Order No.: PO6044
Report #: 1022861
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 4, 2023 12:34 PM
Due: Sep 11, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
15	GX108/0.3-0.4	Aug 25, 2023		Soil	S23-Se0006229		X	X
16	GX108/1.0-1.1	Aug 25, 2023		Soil	S23-Se0006230		X	X
17	GX109/0.1-0.2	Aug 28, 2023		Soil	S23-Se0006231		X	X
18	GX109/0.9-1.0	Aug 28, 2023		Soil	S23-Se0006232		X	X
19	GX110/0.2-0.3	Aug 28, 2023		Soil	S23-Se0006233		X	X
20	GX110/0.9-1.0	Aug 28, 2023		Soil	S23-Se0006234		X	X
21	GX111/0.1-0.2	Aug 29, 2023		Soil	S23-Se0006235		X	X
22	GX111/1.3-1.4	Aug 29, 2023		Soil	S23-Se0006236		X	X
23	GX112/0.1-0.2	Aug 30, 2023		Soil	S23-Se0006237		X	X
24	GX112/1.7-1.8	Aug 30, 2023		Soil	S23-Se0006238		X	X
25	GX113/0.4-0.5	Aug 30, 2023		Soil	S23-Se0006239		X	X
26	GX113/0.9-1.0	Aug 30, 2023		Soil	S23-Se0006240		X	X
27	GX114/0.1-0.2	Aug 31, 2023		Soil	S23-Se0006241		X	X
28	GX114/1.0-1.1	Aug 31, 2023		Soil	S23-Se0006242		X	X
29	GX115/0.0-0.1	Aug 31, 2023		Soil	S23-Se0006243		X	X
30	GX115/0.9-1.0	Aug 31, 2023		Soil	S23-Se0006244		X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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NSW 2102

Project Name: RICHMOND

Order No.: PO6044
Report #: 1022861
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 4, 2023 12:34 PM
Due: Sep 11, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
31	DS1	Aug 22, 2023		Soil	S23-Se0006245		X	X
32	DS2	Aug 23, 2023		Soil	S23-Se0006246		X	X
33	R1	Aug 21, 2023		Water	S23-Se0006247			X
34	R3	Aug 23, 2023		Water	S23-Se0006248			X
35	R4	Aug 24, 2023		Water	S23-Se0006249			X
36	R5	Aug 25, 2023		Water	S23-Se0006250			X
37	R6	Aug 28, 2023		Water	S23-Se0006251			X
38	R8	Aug 30, 2023		Water	S23-Se0006252			X
39	R9	Aug 31, 2023		Water	S23-Se0006253			X
40	FRB2	Aug 28, 2023		Water	S23-Se0006254			X
41	GX101/2.0-2.1	Aug 21, 2023		Soil	S23-Se0006257	X		
42	GX103/1.5-1.6	Aug 22, 2023		Soil	S23-Se0006258	X		
43	GX104/1.5-1.6	Aug 23, 2023		Soil	S23-Se0006259	X		
44	GX105/1.9-2.0	Aug 23, 2023		Soil	S23-Se0006260	X		
45	GX106/1.4-1.5	Aug 24, 2023		Soil	S23-Se0006261	X		
46	GX107/1.5-1.6	Aug 24, 2023		Soil	S23-Se0006262	X		

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
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Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
47	GX108/1.9-2.0	Aug 25, 2023		Soil	S23-Se0006263	X		
48	GX109/1.2-1.3	Aug 28, 2023		Soil	S23-Se0006264	X		
49	GX110/1.5-1.6	Aug 28, 2023		Soil	S23-Se0006265	X		
50	GX111/1.9-2.0	Aug 29, 2023		Soil	S23-Se0006266	X		
51	GX113/1.9-2.0	Aug 30, 2023		Soil	S23-Se0006267	X		
52	GX115/1.6-1.7	Aug 31, 2023		Soil	S23-Se0006268	X		
53	R2	Aug 22, 2023		Water	S23-Se0006269	X		
54	R7	Aug 29, 2023		Water	S23-Se0006270	X		
55	FRB1	Aug 21, 2023		Water	S23-Se0006271	X		
Test Counts						15	32	40

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	86			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	93			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	87			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	95			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	98			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	91			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	86			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	82			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	92			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	94			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	95			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	90			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	78			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	83			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	79			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	84			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	89			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-Se0006023	NCP	%	89			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0006023	NCP	%	93			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Au0060079	NCP	%	94			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0006023	NCP	%	86			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0006023	NCP	%	106			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0006023	NCP	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0006023	NCP	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0006023	NCP	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0006023	NCP	%	102			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Au0060079	NCP	%	142			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0006023	NCP	%	100			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-Se0006023	NCP	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0006023	NCP	%	92			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0006023	NCP	%	96			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0006023	NCP	%	83			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0006023	NCP	%	93			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0006023	NCP	%	92			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0006023	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-Se0006023	NCP	%	87			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0006023	NCP	%	94			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0006023	NCP	%	88			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0006023	NCP	%	69			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Au0060079	NCP	%	91			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0006023	NCP	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Au0060079	NCP	%	89			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0006023	NCP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0006023	NCP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0006023	NCP	%	95			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0006023	NCP	%	92			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0006247	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0006247	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0006247	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:

Asim Khan Analytical Services Manager



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.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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Penrose,	Rolleston,	Gate Pa,
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Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	Not provided
Turnaround time:	5 Day
Date/Time received	Sep 4, 2023 12:34 PM
Eurofins reference	1022861

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 : .1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

TS1 and TS2 migrated to report #1022997.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: ####
Date Submitted: 8/31/2023

Purchase Order No: PO6044
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required:

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS Extended Suite - 30 PFAS standard level	Hold	SUITE
	GX101 / 0.2-0.3	8/21/2023	x						x		
	GX101 / 1.0-1.1	8/21/2023	x						x		
	GX101 / 2.0-2.1	8/21/2023	x							x	
	GX102 / 0.1-0.2	8/21/2023	x						x		
	GX102 / 1.0-1.1	8/21/2023	x						x		
	GX103 / 0.0-0.1	8/22/2023	x						x		
	GX103 / 1.1-1.2	8/22/2023	x						x		
	GX103 / 1.5-1.6	8/22/2023	x							x	
	GX104 / 0.1-0.2	8/23/2023	x						x		
	GX104 / 1.1-1.2	8/23/2023	x						x		
	GX104 / 1.5-1.6	8/23/2023	x							x	
	GX105 / 0.3-0.4	8/23/2023	x						x		
	GX105 / 1.0-1.1	8/23/2023	x						x		
	GX105 / 1.9-2.0	8/23/2023	x							x	
	GX106 / 0.2-0.3	8/24/2023	x						x		
	GX106 / 0.9-1.0	8/24/2023	x						x		
	GX106 / 1.4-1.5	8/24/2023	x							x	
	GX107 / 0.0-0.1	8/24/2023	x						x		

B1 B1A B2 B2A B3 B4 B4A B5 B6 B7 B7A B8 B9 B10 B11 B11A B11B B12 B12A B13 B14 B15 B16 B17 B18 B19 B20

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 31/08/2023 17:30 Signature: SYB Received by: [illegible] Date/Time: 9/4 12:30 Signature:

0.1°C 3e

10228861

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034
Date Submitted: 8/31/2023

Purchase Order No: PO6044
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required:

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS Extended Suite - 30 PFAS standard level	Hold	SUITE
	GX107 / 1.1-1.2	8/24/2023	x						x		
	GX107 / 1.5-1.6	8/24/2023	x							x	
	GX108 / 0.3-0.4	8/25/2023	x						x		
	GX108 / 1.0-1.1	8/25/2023	x						x		
	GX108 / 1.9-2.0	8/25/2023	x							x	
	GX109 / 0.1-0.2	8/28/2023	x						x		
	GX109 / 0.9-1.0	8/28/2023	x						x		
	GX109 / 1.2-1.3	8/28/2023	x							x	
	GX110 / 0.2-0.3	8/28/2023	x						x		
	GX110 / 0.9-1.0	8/28/2023	x						x		
	GX110 / 1.5-1.6	8/28/2023	x							x	
	GX111 / 0.1-0.2	8/29/2023	x						x		
	GX111 / 1.3-1.4	8/29/2023	x						x		
	GX111 / 1.9-2.0	8/29/2023	x							x	
	GX112 / 0.1-0.2	8/30/2023	x						x		
	GX112 / 1.7-1.8	8/30/2023	x						x		
	GX113 / 0.4-0.5	8/30/2023	x						x		
	GX113 / 0.9-1.0	8/30/2023	x						x		

B1 B1A B2 B2A B3 B4 B4A B5 B6 B7 B7A B8 B9 B10 B11 B11A B11B B12 B12A B13 B14 B15 B16 B17 B18 B19 B20

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 31/08/2023 17:30 Signature: SYB Received by: _____ Date/Time: _____ Signature: _____

1022861

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034
Date Submitted: 8/31/2023

Purchase Order No: PO6044
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required:

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS Extended Suite - 30 PFAS standard level	Hold	SUITE
	GX113 / 1.9-2.0	8/30/2023	x							x	
	GX114 / 0.1-0.2	8/31/2023	x						x		
	GX114 / 1.0-1.1	8/31/2023	x						x		
	GX115 / 0.0-0.1	8/31/2023	x						x		
	GX115 / 0.9-1.0	8/31/2023	x						x		
	GX115 / 1.6-1.7	8/31/2023	x							x	
	DS1	8/22/2023	x						x		
	DS2	8/23/2023	x						x		
	R1	8/21/2023		x					x		
	R2	8/22/2023		x						x	
	R3	8/23/2023		x					x		
	R4	8/24/2023		x					x		
	R5	8/25/2023		x					x		
	R6	8/28/2023		x					x		
	R7	8/29/2023		x						x	
	R8	8/30/2023		x					x		
	R9	8/31/2023		x					x		
	FRB1	8/21/2023		x						x	
	FRB2	8/28/2023		x					x		

B1 B1A B2 B2A B3 B4 B4A B5 B6 B7 B7A B8 B9 B10 B11 B11A B11B B12 B12A B13 B14 B15 B16 B17 B18 B19 B20

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 31/08/2023 17:30 Signature: SYB Received by: _____ Date/Time: _____ Signature: _____

1022861

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Sarah Bolton**

Report **1022997-S**
Project name RICHMOND
Received Date Sep 04, 2023

Client Sample ID			**TS1**	**TS2**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S23-Se0006255**	**S23-Se0006256**
Date Sampled			**Aug 22, 2023**	**Aug 23, 2023**
Test/Reference	LOR	Unit		
Sample Properties				
% Moisture	1	%	9.9	17
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	87	85
13C5-PFPeA (surr.)	1	%	97	114
13C5-PFHxA (surr.)	1	%	118	115
13C4-PFHpA (surr.)	1	%	90	85
13C8-PFOA (surr.)	1	%	96	96
13C5-PFNA (surr.)	1	%	107	106
13C6-PFDA (surr.)	1	%	94	90
13C2-PFUnDA (surr.)	1	%	101	101
13C2-PFDoDA (surr.)	1	%	109	107
13C2-PFTeDA (surr.)	1	%	97	87
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10
13C8-FOSA (surr.)	1	%	82	78
D3-N-MeFOSA (surr.)	1	%	97	94

Client Sample ID			TS1	TS2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Se0006255	S23-Se0006256
Date Sampled			Aug 22, 2023	Aug 23, 2023
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D5-N-EtFOSA (surr.)	1	%	102	104
D7-N-MeFOSE (surr.)	1	%	87	84
D9-N-EtFOSE (surr.)	1	%	83	85
D5-N-EtFOSAA (surr.)	1	%	102	101
D3-N-MeFOSAA (surr.)	1	%	103	104
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	109	101
18O2-PFHxS (surr.)	1	%	96	88
13C8-PFOS (surr.)	1	%	85	82
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	71	61
13C2-6:2 FTSA (surr.)	1	%	72	71
13C2-8:2 FTSA (surr.)	1	%	122	126
13C2-10:2 FTSA (surr.)	1	%	119	120
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Sep 05, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Sep 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Sep 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Sep 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Sep 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Sep 05, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name:	Geo-Logix P/L	**Order No.:**	PO6044	**Received:**	Sep 4, 2023 12:34 PM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	1022997	**Due:**	Sep 12, 2023
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Sarah Bolton
Project Name:	RICHMOND				

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TS1	Aug 22, 2023		Soil	S23-Se0006255	X	X
2	TS2	Aug 23, 2023		Soil	S23-Se0006256	X	X
Test Counts						2	2

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	70			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	103			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	95			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	113			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	112			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	114			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	100			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	117			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	89			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	96			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	99			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	85			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	104			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	86			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	102			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	79			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	78			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	91			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	97			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	110			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	87			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-Se0006255	CP	%	91			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0006255	CP	%	79			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Se0006255	CP	%	97			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0006255	CP	%	98			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0006255	CP	%	98			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0006255	CP	%	104			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0006255	CP	%	113			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0006255	CP	%	109			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0006255	CP	%	98			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Se0006255	CP	%	117			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0006255	CP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-Se0006255	CP	%	100			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0006255	CP	%	101			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0006255	CP	%	96			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0006255	CP	%	99			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0006255	CP	%	93			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0006255	CP	%	91			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0006255	CP	%	100			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-Se0006255	CP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0006255	CP	%	107			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0006255	CP	%	80			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0006255	CP	%	73			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Se0006255	CP	%	94			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0006255	CP	%	97			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Se0006255	CP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-Se0006255	CP	%	113			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0006255	CP	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0006255	CP	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0006255	CP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0006255	CP	%	95			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Se0006255	CP	%	9.9	9.9	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0006256	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0006256	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0006256	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0006256	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan	Analytical Services Manager
Joseph Edouard	Senior Analyst-PFAS
Mary Makarios	Senior Analyst-Sample Properties



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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	Not provided
Turnaround time:	5 Day
Date/Time received	Sep 4, 2023 12:34 PM
Eurofins reference	1022997

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 : .1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Original report #1022861

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 8/31/2023

Page 1 of 1
Purchase Order No: PO6045
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required:

PLEASE SEND TRIPLICATE SAMPLES TO EUROFINS MELBOURNE

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS Extended Suite - 30 PFAS standard level	Hold	SUITE
	TS1	8/22/2023	x					PLEASE SEND TO EUROFINS MELBOURNE	x		
	TS2	8/23/2023	x					PLEASE SEND TO EUROFINS MELBOURNE	x		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 31/08/2023 17:30 Signature: SYB Received by: Brendan Date/Time: 9/9 12:34 Signature: 0.1°C

10228861

Version
Issued: June
Review: January

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Sarah Bolton**

Report **1025896-W**
Project name RICHMOND
Project ID 2301034
Received Date Sep 13, 2023

Client Sample ID			**GW101**	**GW102**	**GW103**	**GW104**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-Se0031223**	**S23-Se0031224**	**S23-Se0031225**	**S23-Se0031226**
Date Sampled			**Sep 13, 2023**	**Sep 13, 2023**	**Sep 13, 2023**	**Sep 13, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.03	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.07	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	77	77	107	101
13C5-PFPeA (surr.)	1	%	92	89	115	114
13C5-PFHxA (surr.)	1	%	92	86	115	112
13C4-PFHpA (surr.)	1	%	86	87	109	109
13C8-PFOA (surr.)	1	%	93	83	113	108
13C5-PFNA (surr.)	1	%	78	78	112	117
13C6-PFDA (surr.)	1	%	81	79	107	104
13C2-PFUnDA (surr.)	1	%	75	78	105	104
13C2-PFDoDA (surr.)	1	%	84	80	100	102
13C2-PFTeDA (surr.)	1	%	91	88	94	105
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	91	84	107	109
D3-N-MeFOSA (surr.)	1	%	81	78	75	105
D5-N-EtFOSA (surr.)	1	%	83	78	72	108

Client Sample ID			GW101	GW102	GW103	GW104
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031223	S23-Se0031224	S23-Se0031225	S23-Se0031226
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D7-N-MeFOSE (surr.)	1	%	81	82	96	103
D9-N-EtFOSE (surr.)	1	%	88	85	100	109
D5-N-EtFOSAA (surr.)	1	%	77	72	92	89
D3-N-MeFOSAA (surr.)	1	%	80	70	89	93
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.07	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	84	85	114	112
18O2-PFHxS (surr.)	1	%	89	87	125	119
13C8-PFOS (surr.)	1	%	89	81	115	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	78	70	107	99
13C2-6:2 FTSA (surr.)	1	%	73	69	102	97
13C2-8:2 FTSA (surr.)	1	%	81	79	120	145
13C2-10:2 FTSA (surr.)	1	%	76	73	91	108
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	0.07	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.07	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.14	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	0.18	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	0.19	< 0.1

Client Sample ID			GW105	GW106	GW107	GW108
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031227	S23-Se0031228	S23-Se0031229	S23-Se0031230
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW105	GW106	GW107	GW108
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031227	S23-Se0031228	S23-Se0031229	S23-Se0031230
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	105	109	79	89
13C5-PFPeA (surr.)	1	%	119	130	88	96
13C5-PFHxA (surr.)	1	%	119	123	85	97
13C4-PFHpA (surr.)	1	%	129	115	81	94
13C8-PFOA (surr.)	1	%	109	113	82	99
13C5-PFNA (surr.)	1	%	119	115	77	98
13C6-PFDA (surr.)	1	%	110	106	74	97
13C2-PFUnDA (surr.)	1	%	107	106	74	92
13C2-PFDoDA (surr.)	1	%	95	101	68	96
13C2-PFTeDA (surr.)	1	%	85	90	73	101
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	110	105	75	95
D3-N-MeFOSA (surr.)	1	%	84	68	72	88
D5-N-EtFOSA (surr.)	1	%	76	61	74	93
D7-N-MeFOSE (surr.)	1	%	106	103	75	102
D9-N-EtFOSE (surr.)	1	%	104	102	81	105
D5-N-EtFOSAA (surr.)	1	%	89	93	66	84
D3-N-MeFOSAA (surr.)	1	%	93	98	63	85
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	119	122	87	101
18O2-PFHxS (surr.)	1	%	127	125	88	101
13C8-PFOS (surr.)	1	%	118	115	74	96

Client Sample ID			GW105	GW106	GW107	GW108
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031227	S23-Se0031228	S23-Se0031229	S23-Se0031230
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	110	103	73	90
13C2-6:2 FTSA (surr.)	1	%	104	108	74	89
13C2-8:2 FTSA (surr.)	1	%	142	116	96	124
13C2-10:2 FTSA (surr.)	1	%	91	97	64	91
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW109	GW110	GW111	GW112
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031231	S23-Se0031232	S23-Se0031233	S23-Se0031234
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	104	95	110	108
13C5-PFPeA (surr.)	1	%	127	109	128	118
13C5-PFHxA (surr.)	1	%	132	99	119	120
13C4-PFHpA (surr.)	1	%	124	101	119	119
13C8-PFOA (surr.)	1	%	115	99	117	105
13C5-PFNA (surr.)	1	%	115	89	115	114
13C6-PFDA (surr.)	1	%	115	86	113	109
13C2-PFUnDA (surr.)	1	%	113	86	111	103
13C2-PFDoDA (surr.)	1	%	108	92	103	102
13C2-PFTeDA (surr.)	1	%	74	87	82	92

Client Sample ID			GW109	GW110	GW111	GW112
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031231	S23-Se0031232	S23-Se0031233	S23-Se0031234
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	111	94	96	113
D3-N-MeFOSA (surr.)	1	%	62	92	38	102
D5-N-EtFOSA (surr.)	1	%	61	84	37	101
D7-N-MeFOSE (surr.)	1	%	100	86	74	106
D9-N-EtFOSE (surr.)	1	%	101	92	77	113
D5-N-EtFOSAA (surr.)	1	%	100	81	89	98
D3-N-MeFOSAA (surr.)	1	%	100	78	94	94
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	123	111	128	120
18O2-PFHxS (surr.)	1	%	118	102	125	114
13C8-PFOS (surr.)	1	%	116	97	115	111
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	151	102	115	107
13C2-6:2 FTSA (surr.)	1	%	132	98	103	101
13C2-8:2 FTSA (surr.)	1	%	132	95	128	107
13C2-10:2 FTSA (surr.)	1	%	112	89	104	102
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW113	GW114	GW115	DW1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031235	S23-Se0031236	S23-Se0031237	S23-Se0031238
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	102	105	100	104
13C5-PFPeA (surr.)	1	%	118	116	105	118
13C5-PFHxA (surr.)	1	%	123	113	112	128
13C4-PFHpA (surr.)	1	%	115	110	98	125
13C8-PFOA (surr.)	1	%	107	106	100	112
13C5-PFNA (surr.)	1	%	113	106	103	114
13C6-PFDA (surr.)	1	%	106	106	98	103
13C2-PFUnDA (surr.)	1	%	102	102	93	98
13C2-PFDoDA (surr.)	1	%	110	100	95	94
13C2-PFTeDA (surr.)	1	%	90	77	93	74
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	110	114	102	102
D3-N-MeFOSA (surr.)	1	%	99	94	97	93
D5-N-EtFOSA (surr.)	1	%	106	103	98	93
D7-N-MeFOSE (surr.)	1	%	105	104	93	96
D9-N-EtFOSE (surr.)	1	%	108	108	104	96
D5-N-EtFOSAA (surr.)	1	%	96	99	89	83
D3-N-MeFOSAA (surr.)	1	%	102	98	91	91
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	109	117	114	123

Client Sample ID			GW113	GW114	GW115	DW1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0031235	S23-Se0031236	S23-Se0031237	S23-Se0031238
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
18O2-PFHxS (surr.)	1	%	116	117	107	116
13C8-PFOS (surr.)	1	%	111	114	101	109
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	102	101	101	182
13C2-6:2 FTSA (surr.)	1	%	115	95	94	115
13C2-8:2 FTSA (surr.)	1	%	111	114	109	120
13C2-10:2 FTSA (surr.)	1	%	107	93	105	100
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			DW2	DS1	FRB1
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S23-Se0031239	S23-Se0031240	S23-Se0031242
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.02	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	66	108	107
13C5-PFPeA (surr.)	1	%	100	125	120
13C5-PFHxA (surr.)	1	%	103	118	118
13C4-PFHpA (surr.)	1	%	89	109	114
13C8-PFOA (surr.)	1	%	91	105	107
13C5-PFNA (surr.)	1	%	91	108	113
13C6-PFDA (surr.)	1	%	88	101	98
13C2-PFUnDA (surr.)	1	%	87	90	92
13C2-PFDoDA (surr.)	1	%	79	98	84
13C2-PFTeDA (surr.)	1	%	81	91	55

Client Sample ID			DW2	DS1	FRB1
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S23-Se0031239	S23-Se0031240	S23-Se0031242
Date Sampled			Sep 13, 2023	Sep 13, 2023	Sep 13, 2023
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	91	109	112
D3-N-MeFOSA (surr.)	1	%	84	94	83
D5-N-EtFOSA (surr.)	1	%	87	88	80
D7-N-MeFOSE (surr.)	1	%	79	103	96
D9-N-EtFOSE (surr.)	1	%	82	106	101
D5-N-EtFOSAA (surr.)	1	%	79	90	84
D3-N-MeFOSAA (surr.)	1	%	76	88	90
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.02	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	94	118	115
18O2-PFHxS (surr.)	1	%	97	120	113
13C8-PFOS (surr.)	1	%	91	105	103
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	105	110	99
13C2-6:2 FTSA (surr.)	1	%	85	102	106
13C2-8:2 FTSA (surr.)	1	%	86	112	104
13C2-10:2 FTSA (surr.)	1	%	84	97	88
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	0.03	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.03	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.04	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.08	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Sep 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Sep 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Sep 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Sep 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Sep 14, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Report #: 1025896
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Received: Sep 13, 2023 6:25 PM
Due: Sep 20, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	GW101	Sep 13, 2023		Water	S23-Se0031223		X
2	GW102	Sep 13, 2023		Water	S23-Se0031224		X
3	GW103	Sep 13, 2023		Water	S23-Se0031225		X
4	GW104	Sep 13, 2023		Water	S23-Se0031226		X
5	GW105	Sep 13, 2023		Water	S23-Se0031227		X
6	GW106	Sep 13, 2023		Water	S23-Se0031228		X
7	GW107	Sep 13, 2023		Water	S23-Se0031229		X
8	GW108	Sep 13, 2023		Water	S23-Se0031230		X
9	GW109	Sep 13, 2023		Water	S23-Se0031231		X
10	GW110	Sep 13, 2023		Water	S23-Se0031232		X
11	GW111	Sep 13, 2023		Water	S23-Se0031233		X
12	GW112	Sep 13, 2023		Water	S23-Se0031234		X
13	GW113	Sep 13, 2023		Water	S23-Se0031235		X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Project Name: RICHMOND
Project ID: 2301034

Order No.: PO#6058SB
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Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
14	GW114	Sep 13, 2023		Water	S23-Se0031236		X
15	GW115	Sep 13, 2023		Water	S23-Se0031237		X
16	DW1	Sep 13, 2023		Water	S23-Se0031238		X
17	DW2	Sep 13, 2023		Water	S23-Se0031239		X
18	DS1	Sep 13, 2023		Water	S23-Se0031240		X
19	DS2	Sep 13, 2023		Water	S23-Se0031241	X	
20	FRB1	Sep 13, 2023		Water	S23-Se0031242		X
Test Counts						1	19

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	112			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	115			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	117			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	117			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	110			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	114			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	113			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	120			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	115			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	108			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	108			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	114			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	112			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	114			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	105			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	112			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	116			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	97			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	98			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	113			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	115			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	116			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-Se0031225	CP	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0031225	CP	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Se0031225	CP	%	115			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0031225	CP	%	98			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0031225	CP	%	113			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0031225	CP	%	108			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0031225	CP	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0031225	CP	%	108			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0031225	CP	%	110			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Se0031225	CP	%	128			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0031225	CP	%	113			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-Se0031225	CP	%	106			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0031225	CP	%	107			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0031225	CP	%	106			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0031225	CP	%	101			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0031225	CP	%	98			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0031225	CP	%	104			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0031225	CP	%	111			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-Se0031225	CP	%	103			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0031225	CP	%	101			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0031225	CP	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0031225	CP	%	91			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Se0031225	CP	%	104			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0031225	CP	%	103			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Se0031225	CP	%	111			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-Se0031225	CP	%	93			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0031225	CP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0031225	CP	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0031225	CP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0031225	CP	%	97			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Se0031224	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-Se0031224	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan Analytical Services Manager



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.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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Eurofins Environment Testing Australia Pty Ltd

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	2301034
Turnaround time:	5 Day
Date/Time received	Sep 13, 2023 6:25 PM
Eurofins reference	1025896

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 : .9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted:

Page 1 of 2
Purchase Order No: PO#6058SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds	Hold	SUITE
	GW101	13/9		✓																							✓		
	GW102	↓		✓																							✓		
	GW103			✓																							✓		
	GW104			✓																							✓		
	GW105			✓																							✓		
	GW106			✓																							✓		
	GW107			✓																							✓		
	GW108			✓																							✓		
	GW109			✓																							✓		
	GW110			✓																							✓		
	GW111			✓																							✓		
	GW112			✓																							✓		
	GW113			✓																							✓		
	GW114			✓																							✓		
	GW115			✓																							✓		
	DW1			✓																							✓		
	DW2			✓																							✓		
	DS1	↓		✓																							✓		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: SBolton Date/Time: 13/9 1825 Signature:
Received by: Richan Date/Time: 13/9 6:25pm Signature:
-0.9°c

#025896

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: _____

Contact email: _____ AS paagel

Project Name: _____

Project Number: _____ Date Submitted: _____

Purchase Order No: _____

Quote Reference: _____

Send Invoice to: accounts@geo-logix.com.au

TAT required: _____

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	DS2	13/9		✓																								✓		
	FRB1	↓		✓																										

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S Bolton Date/Time: 13/9 18:25 Signature: SBJ Received by: _____ Date/Time: _____ Signature: _____

1025896

Version: V1
Date issued: April 2019
Review Date: April 2021

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1084465-W**
Project name RICHMOND
Project ID 2301034C
Received Date Apr 04, 2024

Client Sample ID			**GW103**
Sample Matrix			**Water**
Eurofins Sample No.			**S24-Ap0010194**
Date Sampled			**Apr 02, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	[N09]0.02
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.06
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	110
13C5-PFPeA (surr.)	1	%	114
13C5-PFHxA (surr.)	1	%	121
13C4-PFHpA (surr.)	1	%	108
13C8-PFOA (surr.)	1	%	115
13C5-PFNA (surr.)	1	%	109
13C6-PFDA (surr.)	1	%	102
13C2-PFUnDA (surr.)	1	%	95
13C2-PFDoDA (surr.)	1	%	95
13C2-PFTeDA (surr.)	1	%	102
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	108
D3-N-MeFOSA (surr.)	1	%	108

Client Sample ID			GW103
Sample Matrix			Water
Eurofins Sample No.			S24-Ap0010194
Date Sampled			Apr 02, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	115
D7-N-MeFOSE (surr.)	1	%	90
D9-N-EtFOSE (surr.)	1	%	94
D5-N-EtFOSAA (surr.)	1	%	90
D3-N-MeFOSAA (surr.)	1	%	91
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	[N09]0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.06
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	120
18O2-PFHxS (surr.)	1	%	108
13C8-PFOS (surr.)	1	%	105
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	114
13C2-6:2 FTSA (surr.)	1	%	100
13C2-8:2 FTSA (surr.)	1	%	86
13C2-10:2 FTSA (surr.)	1	%	54
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	0.06
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.06
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.12
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.15
Sum of PFASs (n=30)*	0.1	ug/L	0.16

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	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Apr 05, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6294
Report #: 1084465
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Apr 4, 2024 5:34 PM
Due: Apr 12, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	GW103	Apr 02, 2024		Water	S24-Ap0010194	X
Test Counts						1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
PFASs Summations							
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	-			0.01	N/A	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	100			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	105			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	107			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	101			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	124			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	112			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	93			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	115			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	95			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	106			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	117			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	98			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	127			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	105			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	108			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	101			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ap0013107	NCP	%	98			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ap0013107	NCP	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ap0013107	NCP	%	101			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ap0013107	NCP	%	96			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ap0013107	NCP	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ap0013107	NCP	%	107			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ap0013107	NCP	%	95			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ap0013107	NCP	%	110			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ap0013107	NCP	%	116			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ap0013107	NCP	%	123			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ap0013107	NCP	%	108			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ap0013107	NCP	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ap0013107	NCP	%	82			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ap0013107	NCP	%	113			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ap0013107	NCP	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ap0013107	NCP	%	108			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ap0013107	NCP	%	111			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ap0013107	NCP	%	111			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ap0013107	NCP	%	108			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ap0013107	NCP	%	105			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ap0013107	NCP	%	96			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ap0013107	NCP	%	92			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ap0013107	NCP	%	98			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ap0013107	NCP	%	117			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ap0013107	NCP	%	97			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ap0013107	NCP	%	89			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ap0013107	NCP	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ap0013107	NCP	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ap0013107	NCP	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ap0013107	NCP	%	120			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ap0010194	CP	ug/L	0.02	0.02	5.6	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ap0010194	CP	ug/L	0.06	0.06	6.1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ap0010194	CP	ug/L	0.01	0.01	4.7	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ap0010194	CP	ug/L	0.01	0.01	5.6	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ap0010194	CP	ug/L	0.06	0.06	5.5	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ap0010194	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ap0010194	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan Analytical Services Manager



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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Apr 4, 2024 5:34 PM
Eurofins reference	1084465

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 : 6.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: C. BISITS J. MALTMAN
Contact email: JMALTMAN@GEO-LOGIX.COM.AU CBISITS@GEO-LOGIX.COM.AU
Project Name: RICHMOND
Project Number: 2301034 A Date Submitted: 4/4/24

Page 1 of 1
Purchase Order No: PO 629434
Quote Reference: 230714 GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STANDARD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS 30 COMPOUNDS	Hold	SUITE
1	SW103	2/4/24		X																							X			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: CATRIONA BISITS Date/Time: 4/4/24 Signature: _____ Received by: _____ Date/Time: _____ Signature: _____

1084465

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Sarah Bolton**

Report **1025792-W**
Project name RICHMOND
Project ID 2301034
Received Date Sep 13, 2023

Client Sample ID			**TS1**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Se0030521**
Date Sampled			**Sep 13, 2023**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	106
13C5-PFPeA (surr.)	1	%	86
13C5-PFHxA (surr.)	1	%	87
13C4-PFHpA (surr.)	1	%	81
13C8-PFOA (surr.)	1	%	100
13C5-PFNA (surr.)	1	%	88
13C6-PFDA (surr.)	1	%	94
13C2-PFUnDA (surr.)	1	%	81
13C2-PFDoDA (surr.)	1	%	93
13C2-PFTeDA (surr.)	1	%	73
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	108
D3-N-MeFOSA (surr.)	1	%	138
D5-N-EtFOSA (surr.)	1	%	147

Client Sample ID			TS1
Sample Matrix			Water
Eurofins Sample No.			S23-Se0030521
Date Sampled			Sep 13, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D7-N-MeFOSE (surr.)	1	%	100
D9-N-EtFOSE (surr.)	1	%	114
D5-N-EtFOSAA (surr.)	1	%	82
D3-N-MeFOSAA (surr.)	1	%	70
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	94
18O2-PFHxS (surr.)	1	%	90
13C8-PFOS (surr.)	1	%	80
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	80
13C2-6:2 FTSA (surr.)	1	%	71
13C2-8:2 FTSA (surr.)	1	%	76
13C2-10:2 FTSA (surr.)	1	%	79
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Sep 15, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Sep 15, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Sep 15, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Sep 15, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Sep 13, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO#6059SB
Report #: 1025792
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Sep 13, 2023 6:25 PM
Due: Sep 20, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TS1	Sep 13, 2023		Water	S23-Se0030521		X
2	TS2	Sep 13, 2023		Water	S23-Se0030522	X	
Test Counts						1	1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	81			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	75			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	77			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	74			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	72			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	73			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	80			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	85			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	79			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	57			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	82			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	85			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	74			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	75			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	79			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	82			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	74			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	81			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	71			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	89			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	75			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	73			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	74			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	77			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	83			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	76			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	80			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	80			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	80			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-Se0037377	NCP	%	86			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Se0037377	NCP	%	85			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Se0037377	NCP	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Se0037377	NCP	%	79			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-Se0037377	NCP	%	82			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-Se0037377	NCP	%	82			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-Se0037377	NCP	%	89			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Se0037377	NCP	%	88			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Se0037377	NCP	%	84			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Se0037377	NCP	%	78			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Se0037377	NCP	%	89			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-Se0037377	NCP	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Se0037377	NCP	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Se0037377	NCP	%	81			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Se0037377	NCP	%	79			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Se0037377	NCP	%	90			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Se0037377	NCP	%	86			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Se0037377	NCP	%	84			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-Se0037377	NCP	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Se0037377	NCP	%	89			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Se0037377	NCP	%	78			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Se0037377	NCP	%	80			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Se0037377	NCP	%	89			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Se0037377	NCP	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Se0037377	NCP	%	87			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Se0037377	NCP	%	71			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Se0037377	NCP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Se0037377	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Se0037377	NCP	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Se0037377	NCP	%	80			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-Se0032597	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-Se0032597	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
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IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMONOL
Project ID:	2301034
Turnaround time:	5 Day
Date/Time received	Sep 13, 2023 6:25 PM
Eurofins reference	1025792

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 : -.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:** _____

Purchase Order No: PO#6059 SB
Quote Reference: 230714 GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

PLEASE SEND TO EUROFINS MELBOURNE

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	TS1							Send to Eurofins Mel.																				✓		
	TS2							11																					✓	

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S. Bolton Date/Time: 13/9 18:25 Signature: SBolton

Received by: Rihan Date/Time: 13/9 6:25pm Signature: 1025792 -0.9°C

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Sarah Bolton**

Report **1041195-W-V2**
Project name RICHMOND
Project ID 2301034
Received Date Nov 03, 2023

Client Sample ID			**FRB1**	**R1**	**R3**	**R4**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-No0009734**	**S23-No0009753**	**S23-No0009755**	**S23-No0009756**
Date Sampled			**Oct 19, 2023**	**Oct 19, 2023**	**Oct 24, 2023**	**Oct 25, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	107	114	115	106
13C5-PFPeA (surr.)	1	%	116	125	120	115
13C5-PFHxA (surr.)	1	%	123	131	132	117
13C4-PFHpA (surr.)	1	%	115	121	119	112
13C8-PFOA (surr.)	1	%	111	115	123	109
13C5-PFNA (surr.)	1	%	106	117	118	107
13C6-PFDA (surr.)	1	%	100	106	106	104
13C2-PFUnDA (surr.)	1	%	89	84	90	84
13C2-PFDoDA (surr.)	1	%	68	72	69	69
13C2-PFTeDA (surr.)	1	%	35	44	33	35
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	117	126	130	119
D3-N-MeFOSA (surr.)	1	%	90	96	88	91

Client Sample ID			FRB1	R1	R3	R4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0009734	S23-No0009753	S23-No0009755	S23-No0009756
Date Sampled			Oct 19, 2023	Oct 19, 2023	Oct 24, 2023	Oct 25, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	92	99	93	97
D7-N-MeFOSE (surr.)	1	%	97	108	105	102
D9-N-EtFOSE (surr.)	1	%	103	103	106	104
D5-N-EtFOSAA (surr.)	1	%	98	102	100	94
D3-N-MeFOSAA (surr.)	1	%	84	101	97	92
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	117	125	129	119
18O2-PFHxS (surr.)	1	%	117	124	124	113
13C8-PFOS (surr.)	1	%	103	106	110	104
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	106	118	111	101
13C2-6:2 FTSA (surr.)	1	%	93	92	96	88
13C2-8:2 FTSA (surr.)	1	%	118	146	163	146
13C2-10:2 FTSA (surr.)	1	%	60	64	66	62
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			R5	R6	R7	R9
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0009757	S23-No0009758	S23-No0009759	S23-No0009761
Date Sampled			Oct 30, 2023	Oct 31, 2023	Nov 01, 2023	Nov 02, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			R5	R6	R7	R9
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0009757	S23-No0009758	S23-No0009759	S23-No0009761
Date Sampled			Oct 30, 2023	Oct 31, 2023	Nov 01, 2023	Nov 02, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	113	112	109	115
13C5-PFPeA (surr.)	1	%	126	118	116	124
13C5-PFHxA (surr.)	1	%	132	131	125	129
13C4-PFHpA (surr.)	1	%	117	121	113	122
13C8-PFOA (surr.)	1	%	119	118	114	120
13C5-PFNA (surr.)	1	%	111	111	111	115
13C6-PFDA (surr.)	1	%	96	102	96	103
13C2-PFUnDA (surr.)	1	%	79	85	84	84
13C2-PFDoDA (surr.)	1	%	65	64	68	65
13C2-PFTeDA (surr.)	1	%	31	27	32	31
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	127	125	118	121
D3-N-MeFOSA (surr.)	1	%	75	96	87	87
D5-N-EtFOSA (surr.)	1	%	78	96	93	91
D7-N-MeFOSE (surr.)	1	%	102	105	100	106
D9-N-EtFOSE (surr.)	1	%	102	106	106	106
D5-N-EtFOSAA (surr.)	1	%	99	98	99	92
D3-N-MeFOSAA (surr.)	1	%	95	93	95	96
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	129	126	121	134
18O2-PFHxS (surr.)	1	%	125	121	118	128
13C8-PFOS (surr.)	1	%	102	102	104	110

Client Sample ID			R5	R6	R7	R9
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0009757	S23-No0009758	S23-No0009759	S23-No0009761
Date Sampled			Oct 30, 2023	Oct 31, 2023	Nov 01, 2023	Nov 02, 2023
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	112	110	107	117
13C2-6:2 FTSA (surr.)	1	%	96	97	92	93
13C2-8:2 FTSA (surr.)	1	%	139	148	130	148
13C2-10:2 FTSA (surr.)	1	%	60	61	60	62
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Nov 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Nov 09, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Nov 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Nov 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Nov 07, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO#6087SB
Report #: 1041195
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Nov 3, 2023 5:40 PM
Due: Nov 10, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	GX116/0.4-0.5	Oct 19, 2023		Soil	S23-No0009692			X	X
2	GX116/0.9-1.0	Oct 19, 2023		Soil	S23-No0009693			X	X
3	GX117/0.3-0.4	Oct 19, 2023		Soil	S23-No0009694			X	X
4	GX117/0.9-1.0	Oct 19, 2023		Soil	S23-No0009695			X	X
5	GX118/0.3-0.4	Oct 20, 2023		Soil	S23-No0009696			X	X
6	GX118/1.0-1.1	Oct 20, 2023		Soil	S23-No0009697			X	X
7	GX119/0.4-0.5	Oct 20, 2023		Soil	S23-No0009698			X	X
8	GX119/1.3-1.4	Oct 20, 2023		Soil	S23-No0009699			X	X
9	GX120/0.4-0.5	Oct 23, 2023		Soil	S23-No0009700			X	X
10	GX120/1.4-1.5	Oct 23, 2023		Soil	S23-No0009701			X	X
11	GX121/0.4-0.5	Oct 23, 2023		Soil	S23-No0009702			X	X
12	GX121/1.4-1.5	Oct 23, 2023		Soil	S23-No0009703			X	X
13	GX122/0.4-0.5	Oct 24, 2023		Soil	S23-No0009704			X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
14	GX122/1.4-1.5	Oct 24, 2023		Soil	S23-No0009705			X	X
15	GX123/0.4-0.5	Oct 24, 2023		Soil	S23-No0009706			X	X
16	GX123/1.4-1.5	Oct 24, 2023		Soil	S23-No0009707			X	X
17	GX124/0.4-0.5	Oct 25, 2023		Soil	S23-No0009708			X	X
18	GX124/1.4-4.5	Oct 25, 2023		Soil	S23-No0009709			X	X
19	GX125/0.5-0.6	Oct 25, 2023		Soil	S23-No0009710			X	X
20	GX125/1.4-1.5	Oct 25, 2023		Soil	S23-No0009711			X	X
21	GX126/0.4-0.5	Oct 30, 2023		Soil	S23-No0009712			X	X
22	GX126/1.4-1.5	Oct 30, 2023		Soil	S23-No0009713			X	X
23	GX127/0.5-0.6	Oct 30, 2023		Soil	S23-No0009714			X	X
24	GX127/1.4-1.5	Oct 30, 2023		Soil	S23-No0009715			X	X
25	GX128/0.4-0.5	Oct 30, 2023		Soil	S23-No0009716			X	X
26	GX128/1.4-1.5	Oct 30, 2023		Soil	S23-No0009717			X	X
27	GX129/0.4-0.5	Nov 01, 2023		Soil	S23-No0009718			X	X
28	GX129/1.4-1.5	Nov 01, 2023		Soil	S23-No0009719			X	X
29	GX130/0.4-0.5	Nov 01, 2023		Soil	S23-No0009720			X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
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Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
30	GX130/1.4-1.5	Nov 01, 2023		Soil	S23-No0009721			X	X
31	GX131/0.4-0.5	Nov 01, 2023		Soil	S23-No0009722			X	X
32	GX131/1.4-1.5	Nov 01, 2023		Soil	S23-No0009723			X	X
33	GX133/0.4-0.5	Nov 02, 2023		Soil	S23-No0009726			X	X
34	GX133/1.4-1.5	Nov 02, 2023		Soil	S23-No0009727			X	X
35	GX134/0.4-0.5	Nov 03, 2023		Soil	S23-No0009728			X	X
36	GX134/1.4-1.5	Nov 03, 2023		Soil	S23-No0009729			X	X
37	DS1B	Oct 19, 2023		Soil	S23-No0009730			X	X
38	DS2B	Oct 19, 2023		Soil	S23-No0009731			X	X
39	DS3B	Oct 23, 2023		Soil	S23-No0009732			X	X
40	DS4B	Oct 23, 2023		Soil	S23-No0009733			X	X
41	FRB1	Oct 19, 2023		Water	S23-No0009734				X
42	GX119/2.0-2.1	Oct 20, 2023		Soil	S23-No0009739		X		
43	GX122/2.9-3.0	Oct 24, 2023		Soil	S23-No0009740		X		
44	GX123/2.9-3.0	Oct 24, 2023		Soil	S23-No0009741		X		
45	GX125/2.9-3.0	Oct 25, 2023		Soil	S23-No0009742		X		

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
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Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
46	GX126/2.9-3.0	Oct 30, 2023		Soil	S23-No0009743		X		
47	GX127/2.9-3.0	Oct 30, 2023		Soil	S23-No0009744		X		
48	GX128/2.9-3.0	Oct 30, 2023		Soil	S23-No0009745		X		
49	GX129/2.9-3.0	Nov 01, 2023		Soil	S23-No0009746		X		
50	GX130/2.9-3.0	Nov 01, 2023		Soil	S23-No0009747		X		
51	GX131/2.5-2.6	Nov 01, 2023		Soil	S23-No0009748		X		
52	GX133/2.9-3.0	Nov 02, 2023		Soil	S23-No0009749		X		
53	GX134/2.9-3.0	Nov 03, 2023		Soil	S23-No0009750		X		
54	DS5B	Oct 31, 2023		Soil	S23-No0009751		X		
55	DS6B	Nov 01, 2023		Soil	S23-No0009752		X		
56	R1	Oct 19, 2023		Water	S23-No0009753				X
57	R2	Oct 20, 2023		Water	S23-No0009754		X		
58	R3	Oct 23, 2023		Water	S23-No0009755				X
59	R4	Oct 24, 2023		Water	S23-No0009756				X
60	R5	Oct 25, 2023		Water	S23-No0009757				X
61	R6	Oct 30, 2023		Water	S23-No0009758				X

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Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
62	R7	Oct 31, 2023		Water	S23-No0009759				X
63	R8	Nov 01, 2023		Water	S23-No0009760	X			
64	R9	Nov 02, 2023		Water	S23-No0009761				X
65	R10	Nov 03, 2023		Water	S23-No0009762		X		
66	W1	Oct 24, 2023		Water	S23-No0009763		X		
67	W2	Oct 25, 2023		Water	S23-No0009764		X		
68	W3	Oct 25, 2023		Water	S23-No0009765		X		
69	W4	Oct 30, 2023		Water	S23-No0009766		X		
70	W5	Oct 31, 2023		Water	S23-No0009767		X		
71	W6	Oct 31, 2023		Water	S23-No0009768		X		
72	DS4B	Oct 19, 2023		Soil	S23-No0009787	X			
73	GX132/2.9-3.0	Oct 19, 2023		Soil	S23-No0009788		X		
Test Counts						2	23	40	48

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	95			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	91			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	92			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	95			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	102			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	82			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	100			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	95			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	94			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	93			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	101			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	93			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	79			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	80			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	83			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	100			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	93			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	90			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-No0009753	CP	%	101			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-No0009753	CP	%	95			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0009753	CP	%	104			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0009753	CP	%	96			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0009753	CP	%	104			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-No0009753	CP	%	105			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0009753	CP	%	113			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0009753	CP	%	117			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0009753	CP	%	102			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0009753	CP	%	103			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-No0009753	CP	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0009753	CP	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0009753	CP	%	103			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0009753	CP	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0009753	CP	%	99			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0009753	CP	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0009753	CP	%	103			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-No0009753	CP	%	98			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0009753	CP	%	86			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0009753	CP	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0009753	CP	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0009753	CP	%	96			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0009753	CP	%	109			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0009753	CP	%	104			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0009753	CP	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0009753	CP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0009753	CP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0009753	CP	%	100			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluoropentanoic acid (PFPeA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0009734	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0009734	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) to amend sampling date for samples: S23-No0009714, S23-No0009715, S23-No0009716, S23-No0009717, S23-No0009731, S23-No0009733, S23-No0009755, S23-No0009756, S23-No0009757, S23-No0009758, and S23-No0009759 as per client request.

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:

Asim Khan	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

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Eurofins Environment Testing Australia Pty Ltd

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	2301034
Turnaround time:	5 Day
Date/Time received	Nov 3, 2023 5:40 PM
Eurofins reference	1041195

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 : 2.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples R8 did not receive. Extra sample GX132/2.9-3.0 were logged and put on hold.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034
Date Submitted:

Purchase Order No: PO#6087SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS-36 compounds	Hold	SUITE
	GX116/0.4-0.5	19/10 ~~18/10~~	✓																									✓		
	GX116/0.9-1.0	"	✓																									✓		
	GX117/0.3-0.4	"	✓																									✓		
	GX117/~~0.9~~-1.0	20 "	✓																									✓		
	GX118/0.3-0.4	~~19~~/10	✓																									✓		
	GX118/1.0-1.1	"	✓																									✓		
	GX119/0.4-0.5	"	✓																									✓		
	GX119/1.3-1.4	"	✓																										✓	
	GX119/2.0-2.1	"	✓																									✓		
	GX120/0.4-0.5	23/10	✓																									✓		
	GX120/1.4-1.5	"	✓																									✓		
	GX121/0.4-0.5	"	✓																									✓		
	GX121/1.4-1.5	"	✓																									✓		
	GX122/0.4-0.5	~~23~~/10	✓																									✓		
	GX122/1.4-1.5	"	✓																										✓	
	GX122/2.9-3.0	"	✓																									✓		
	GX123/0.4-0.5	"	✓																									✓		
	GX123/1.4-1.5	"	✓																											

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature:

Received by: Mary Date/Time: 3/11 5:40PM Signature: 2.1°C

10 41 95

Version: V1
Date Issued: April 2019
Review Date: April 2021

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CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:**

Purchase Order No: PO#6087SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS 30 compounds		Hold	SUITE
	GX123/2.9-3.0	24/10	✓																									✓		
	GX124/0.4-0.5	25/10	✓																									✓		
	GX124/1.4-1.5	"	✓																									✓		
	GX125/0.5-0.6	"	✓																									✓		
	GX125/1.4-1.5	"	✓																									✓		
	GX125/2.9-3.0	"	✓																											✓
	GX126/0.4-0.5	26/10	✓																									✓		
	GX126/1.4-1.5	"	✓																									✓		
	GX126/2.9-3.0	"	✓																											✓
	GX127/0.5-0.6	30/10	✓																									✓		
	GX127/1.4-1.5	"	✓																									✓		
	GX127/2.9-3.0	"	✓																											✓
	GX128/0.4-0.5	"	✓																									✓		
	GX128/1.4-1.5	"	✓																									✓		
	GX128/2.9-3.0	01/11	✓																											✓
	GX129/0.4-0.5	31/10	✓																									✓		
	GX129/1.4-1.5	"	✓																									✓		
	GX129/2.9-3.0	"	✓																											✓

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 03/11/23 Signature: SBolton Received by: Date/Time: Signature:

Version: V1
Date Issued: April 2019
Review Date: April 2021

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CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:**

Purchase Order No: PO#6087SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	GX130/0.4-0.5	31/10	✓																									✓		
	GX130/1.4-1.5	"	✓																									✓		
	GX130/2.9-3.0	"	✓																										✓	
	GX131/0.4-0.5	"	✓																									✓		
	GX131/1.4-1.5	"	✓																									✓		
	GX131/2.5-2.6	"	✓																										✓	
	GX132/0.4-0.5	02/11	✓																									✓		
	GX132/1.4-1.5	"	✓																									✓		
	GX133/0.4-0.5	"	✓																									✓		
	GX133/1.4-1.5	"	✓																									✓		
	GX133/2.9-3.0	"	✓																										✓	
	GX134/0.4-0.5	03/11	✓																									✓		
	GX134/1.4-1.5	"	✓																									✓		
	GX134/2.9-3.0	"	✓																										✓	
	DS1b	19/10	✓																									✓		
	DS2b	19/10	✓																									✓		
	DS3b	23/10	✓																									✓		
	DS4b	23/10	✓																									✓		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature:
Received by: Date/Time: Signature:

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 3/11

Purchase Order No: PO# 6087SB
Quote Reference: 230714 G*LXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	DS5b	31/10	✓																										✓	
	DS6b	01/11	✓																										✓	
	R1	19/10		✓																									✓	
	R2	20/10		✓																									✓	
	R3	23/10		✓																									✓	
	R4	24/10		✓																									✓	
	R5	25/10		✓																									✓	
	R6	30/10		✓																									✓	
	R7	31/10		✓																									✓	
	R8	01/11		✓																									✓	
	R9	02/11		✓																									✓	
	R10	03/11		✓																									✓	
	FRB1	19/10		✓																									✓	
	W1	24/10		✓																								✓	✓	
	W2	25/10		✓																									✓	
	W3	25/10		✓																									✓	
	W4	30/10		✓																									✓	
	W5	31/10		✓																									✓	
	W6	31/10		✓																									✓	

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature: SBM Received by: _____ Date/Time: _____ Signature: _____

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:**

Purchase Order No: PO#6088SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	TS1b	19/10	✓					Please SEND																				✓		
	TS2b	19/10	✓					TO EUROFINS																				✓		
	TS3b	23/10	✓					MELBOURNE																				✓		
	TS4b	24/10	✓					↓																				✓		
	TS5b	31/10	✓																										✓	
	TS6b	01/10	✓																										✓	

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature:

Received by: Date/Time: Signature:

Version: V1
Date Issued: April 2019
Review Date: April 2021

RE: Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Sarah Bolton <SBolton@geo-logix.com.au>

Tue 2023-11-07 9:18 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
Cc:Asim Khan <AsimKhan@eurofins.com>

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hello,

Just confirming that you received my email with questions/instructions below.

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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From: Sarah Bolton
Sent: Monday, November 6, 2023 2:45 PM
To: EnviroSampleNSW@eurofins.com
Cc: Asim Khan <AsimKhan@eurofins.com>
Subject: RE: Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Hi Mary,

There was a sample DS4B on the COC, was there two samples labelled DS4B?

Also, can I confirm that all samples with the prefix 'TS' are sent to Eurofins Melbourne as stated on the COC?

Further, can samples GX132/0.4-0.5 and GX132/1.4-1.5 please be put on an ASAP turn around time?

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

RE: AMENDED Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Sarah Bolton <SBolton@geo-logix.com.au>

Tue 2023-11-07 10:38 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
Cc:Asim Khan <AsimKhan@eurofins.com>

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Hi Elizabeth,

The duplicate sample DS4b dated 23/10/2023 should be TS3b and is labelled incorrectly. Can you please update accordingly?

Can I also get the following water samples run for PFAS analysis as well:

- R1
- R3
- R4
- R5
- R6
- R7
- R9

Sorry, big job I know its confusing.

Thanks so much for your help!

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au



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From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, November 7, 2023 9:52 AM
To: Sarah Bolton <SBolton@geo-logix.com.au>
Subject: AMENDED Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Dear Valued Client,

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 21 May 2024 11:46 AM
To: #AU25_Enviro_Sample_NSW
Cc: Asim Khan
Subject: 1041195-S sample date amendments

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Asim,

Could please get the following sample dates corrected for Report #1041195-S:

GX Reference	Eurofins Reference	Date
DS2B	S23-No0009731	20/10/2023
DS4B	S23-No0009733	24/10/2023
GX127/0.5-0.6	S23-No0009714	31/10/2023
GX127/1.4-1.5	S23-No0009715	31/10/2023
GX128/0.4-0.5	S23-No0009716	31/10/2023
GX128/1.4-1.5	S23-No0009717	31/10/2023

Kind Regards,

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 21 May 2024 12:13 PM
To: #AU25_Enviro_Sample_NSW
Cc: Asim Khan
Subject: 1041195-W sample date amendments

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Asim,

Could please get the following sample dates corrected for Report #1041195-W:

GX Reference	Eurofins Reference	Date
R3	**S23-No0009755**	24/10/2023
R4	**S23-No0009756**	25/10/2023
R5	**S23-No0009757**	30/10/2023
R6	**S23-No0009758**	31/10/2023
R7	**S23-No0009759**	1/11/2023

Kind Regards,

Jenna Maltman | Auditor Assistant
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Sarah Bolton**

Report **1041698-S**
Project name RICHMOND
Project ID 2301034
Received Date Nov 06, 2023

Client Sample ID			**GX132/0.4-0.5**	**GX132/1.4-1.5**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S23-No0009724**	**S23-No0009725**
Date Sampled			**Nov 02, 2023**	**Nov 02, 2023**
Test/Reference	LOR	Unit		
Sample Properties				
% Moisture	1	%	12	11
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	91	92
13C5-PFPeA (surr.)	1	%	96	99
13C5-PFHxA (surr.)	1	%	104	101
13C4-PFHpA (surr.)	1	%	93	93
13C8-PFOA (surr.)	1	%	89	95
13C5-PFNA (surr.)	1	%	91	95
13C6-PFDA (surr.)	1	%	102	101
13C2-PFUnDA (surr.)	1	%	114	114
13C2-PFDoDA (surr.)	1	%	109	103
13C2-PFTeDA (surr.)	1	%	118	111
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10

Client Sample ID			GX132/0.4-0.5	GX132/1.4-1.5
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-No0009724	S23-No0009725
Date Sampled			Nov 02, 2023	Nov 02, 2023
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
13C8-FOSA (surr.)	1	%	93	96
D3-N-MeFOSA (surr.)	1	%	104	100
D5-N-EtFOSA (surr.)	1	%	97	100
D7-N-MeFOSE (surr.)	1	%	94	87
D9-N-EtFOSE (surr.)	1	%	95	86
D5-N-EtFOSAA (surr.)	1	%	104	108
D3-N-MeFOSAA (surr.)	1	%	106	97
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	97	105
18O2-PFHxS (surr.)	1	%	99	99
13C8-PFOS (surr.)	1	%	100	100
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	112	101
13C2-6:2 FTSA (surr.)	1	%	85	101
13C2-8:2 FTSA (surr.)	1	%	109	117
13C2-10:2 FTSA (surr.)	1	%	155	137
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Nov 03, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Nov 03, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Nov 03, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Nov 03, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Nov 03, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Nov 03, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO6087SB
Report #: 1041698
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Nov 3, 2023 5:40 PM
Due: Nov 7, 2023
Priority: 1 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	GX132/0.4-0.5	Nov 02, 2023		Soil	S23-No0009724	X	X
2	GX132/1.4-1.5	Nov 02, 2023		Soil	S23-No0009725	X	X
Test Counts						2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30%; however the following acceptance guidelines are equally applicable: Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported, have been reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	109			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	109			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	111			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	114			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	116			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	119			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	119			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	130			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	122			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	129			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	122			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	113			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	123			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	111			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	115			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	109			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	104			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	108			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	116			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	94			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	99			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	114			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	109			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	106			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	117			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-No0009721	NCP	%	113			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-No0009721	NCP	%	115			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0009721	NCP	%	115			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0009721	NCP	%	123			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0009721	NCP	%	119			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-No0009721	NCP	%	127			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0009721	NCP	%	133			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0009721	NCP	%	141			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0009721	NCP	%	123			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0009721	NCP	%	125			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0009721	NCP	%	121			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-No0009721	NCP	%	116			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0009721	NCP	%	118			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0009721	NCP	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0009721	NCP	%	111			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0009721	NCP	%	116			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0009721	NCP	%	112			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0009721	NCP	%	109			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-No0009721	NCP	%	113			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0009721	NCP	%	114			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0009721	NCP	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0009721	NCP	%	98			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0009721	NCP	%	102			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0009721	NCP	%	112			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0009721	NCP	%	104			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0009721	NCP	%	114			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0009721	NCP	%	118			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0009721	NCP	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0009721	NCP	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0009721	NCP	%	126			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-No0008487	NCP	%	9.4	9.6	1.9	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0009730	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0009730	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0009730	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0009730	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan Analytical Services Manager



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

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	2301034
Turnaround time:	1 Day
Date/Time received	Nov 3, 2023 5:40 PM
Eurofins reference	1041698

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 : 2.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

RE: Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Sarah Bolton <SBolton@geo-logix.com.au>

Tue 2023-11-07 9:18 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
Cc:Asim Khan <AsimKhan@eurofins.com>

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hello,

Just confirming that you received my email with questions/instructions below.

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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From: Sarah Bolton
Sent: Monday, November 6, 2023 2:45 PM
To: EnviroSampleNSW@eurofins.com
Cc: Asim Khan <AsimKhan@eurofins.com>
Subject: RE: Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Hi Mary,

There was a sample DS4B on the COC, was there two samples labelled DS4B?

Also, can I confirm that all samples with the prefix 'TS' are sent to Eurofins Melbourne as stated on the COC?

Further, can samples GX132/0.4-0.5 and GX132/1.4-1.5 please be put on an ASAP turn around time?

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034
Date Submitted:

Purchase Order No: PO#6087SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS-36 compounds	Hold	SUITE
	GX116/0.4-0.5	19/10 ~~18/10~~	✓																									✓		
	GX116/0.9-1.0	"	✓																									✓		
	GX117/0.3-0.4	"	✓																									✓		
	GX117/~~0.9~~-1.0	20 "	✓																									✓		
	GX118/0.3-0.4	~~19~~/10	✓																									✓		
	GX118/1.0-1.1	"	✓																									✓		
	GX119/0.4-0.5	"	✓																									✓		
	GX119/1.3-1.4	"	✓																										✓	
	GX119/2.0-2.1	"	✓																									✓		
	GX120/0.4-0.5	23/10	✓																									✓		
	GX120/1.4-1.5	"	✓																									✓		
	GX121/0.4-0.5	"	✓																									✓		
	GX121/1.4-1.5	"	✓																									✓		
	GX122/0.4-0.5	~~23~~/10	✓																									✓		
	GX122/1.4-1.5	"	✓																										✓	
	GX122/2.9-3.0	"	✓																									✓		
	GX123/0.4-0.5	"	✓																									✓		
	GX123/1.4-1.5	"	✓																											

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature:

Received by: Mary Date/Time: 3/11 5:40PM Signature: 2.1°C

10 41 95

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:**

Purchase Order No: PO#6087SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS 30 compounds		Hold	SUITE
	GX123/2.9-3.0	24/10	✓																									✓		
	GX124/0.4-0.5	25/10	✓																									✓		
	GX124/1.4-1.5	"	✓																									✓		
	GX125/0.5-0.6	"	✓																									✓		
	GX125/1.4-1.5	"	✓																									✓		
	GX125/2.9-3.0	"	✓																											✓
	GX126/0.4-0.5	26/10	✓																									✓		
	GX126/1.4-1.5	"	✓																									✓		
	GX126/2.9-3.0	"	✓																											✓
	GX127/0.5-0.6	30/10	✓																									✓		
	GX127/1.4-1.5	"	✓																									✓		
	GX127/2.9-3.0	"	✓																											✓
	GX128/0.4-0.5	"	✓																									✓		
	GX128/1.4-1.5	"	✓																									✓		
	GX128/2.9-3.0	01/11	✓																											✓
	GX129/0.4-0.5	31/10	✓																									✓		
	GX129/1.4-1.5	"	✓																									✓		
	GX129/2.9-3.0	"	✓																											✓

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 03/11/23 Signature: SBolton Received by: Date/Time: Signature:

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix Pty Ltd
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2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
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F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:**

Purchase Order No: PO#6087SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	GX130/0.4-0.5	31/10	✓																									✓		
	GX130/1.4-1.5	"	✓																									✓		
	GX130/2.9-3.0	"	✓																										✓	
	GX131/0.4-0.5	"	✓																									✓		
	GX131/1.4-1.5	"	✓																									✓		
	GX131/2.5-2.6	"	✓																										✓	
	GX132/0.4-0.5	02/11	✓																									✓		
	GX132/1.4-1.5	"	✓																									✓		
	GX133/0.4-0.5	"	✓																									✓		
	GX133/1.4-1.5	"	✓																									✓		
	GX133/2.9-3.0	"	✓																										✓	
	GX134/0.4-0.5	03/11	✓																									✓		
	GX134/1.4-1.5	"	✓																									✓		
	GX134/2.9-3.0	"	✓																										✓	
	DS1b	19/10	✓																									✓		
	DS2b	19/10	✓																									✓		
	DS3b	23/10	✓																									✓		
	DS4b	23/10	✓																									✓		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature:
Received by: Date/Time: Signature:

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
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CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 3/11

Purchase Order No: PO# 6087SB
Quote Reference: 230714 G*LXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	DS5b	31/10	✓																										✓	
	DS6b	01/11	✓																										✓	
	R1	19/10		✓																									✓	
	R2	20/10		✓																									✓	
	R3	23/10		✓																									✓	
	R4	24/10		✓																									✓	
	R5	25/10		✓																									✓	
	R6	30/10		✓																									✓	
	R7	31/10		✓																									✓	
	R8	01/11		✓																									✓	
	R9	02/11		✓																									✓	
	R10	03/11		✓																									✓	
	FRB1	19/10		✓																									✓	
	W1	24/10		✓																								✓	✓	
	W2	25/10		✓																									✓	
	W3	25/10		✓																									✓	
	W4	30/10		✓																									✓	
	W5	31/10		✓																									✓	
	W6	31/10		✓																									✓	

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature: SBM Received by: _____ Date/Time: _____ Signature: _____

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix Pty Ltd
Building Q2, Level 3
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CHAIN OF CUSTODY

Page 1 of 1

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:**

Purchase Order No: PO#6088SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	TS1b	19/10	✓					Please SEND																				✓		
	TS2b	19/10	✓					TO EUROFINS																				✓		
	TS3b	23/10	✓					MELBOURNE																				✓		
	TS4b	24/10	✓					↓																				✓		
	TS5b	31/10	✓																										✓	
	TS6b	01/10	✓																										✓	

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature:

Received by: Date/Time: Signature:

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Sarah Bolton**

Report **1041726-S-V2**
Project name RICHMOND
Project ID 2301034
Received Date Nov 03, 2023

Client Sample ID			**TS1B**	**TS2B**	**TS3B**	**TS4B**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S23-No0009735**	**S23-No0009736**	**S23-No0009737**	**S23-No0009738**
Date Sampled			**Oct 19, 2023**	**Oct 20, 2023**	**Oct 23, 2023**	**Oct 24, 2023**
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	21	20	4.3	2.1
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	98	102	105	107
13C5-PFPeA (surr.)	1	%	103	109	124	113
13C5-PFHxA (surr.)	1	%	89	92	121	95
13C4-PFHpA (surr.)	1	%	85	92	123	94
13C8-PFOA (surr.)	1	%	82	91	120	91
13C5-PFNA (surr.)	1	%	105	102	139	114
13C6-PFDA (surr.)	1	%	102	91	128	118
13C2-PFUnDA (surr.)	1	%	121	132	115	137
13C2-PFDoDA (surr.)	1	%	88	108	128	98
13C2-PFTeDA (surr.)	1	%	87	106	137	89
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			TS1B	TS2B	TS3B	TS4B
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-No0009735	S23-No0009736	S23-No0009737	S23-No0009738
Date Sampled			Oct 19, 2023	Oct 20, 2023	Oct 23, 2023	Oct 24, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	85	97	110	99
D3-N-MeFOSA (surr.)	1	%	100	116	119	114
D5-N-EtFOSA (surr.)	1	%	118	127	136	129
D7-N-MeFOSE (surr.)	1	%	95	104	90	102
D9-N-EtFOSE (surr.)	1	%	81	94	85	89
D5-N-EtFOSAA (surr.)	1	%	108	126	109	116
D3-N-MeFOSAA (surr.)	1	%	106	133	140	115
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	82	89	127	86
18O2-PFHxS (surr.)	1	%	87	89	122	92
13C8-PFOS (surr.)	1	%	125	106	105	149
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	82	81	121	90
13C2-6:2 FTSA (surr.)	1	%	66	76	145	76
13C2-8:2 FTSA (surr.)	1	%	130	97	137	165
13C2-10:2 FTSA (surr.)	1	%	115	146	102	134
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Nov 07, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Nov 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Nov 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Nov 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Nov 10, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Nov 07, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

Perth ProMicro
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO#6088SB
Report #: 1041726
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Nov 3, 2023 5:40 PM
Due: Nov 10, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	TS1B	Oct 19, 2023		Soil	S23-No0009735		X	X
2	TS2B	Oct 20, 2023		Soil	S23-No0009736		X	X
3	TS3B	Oct 23, 2023		Soil	S23-No0009737		X	X
4	TS4B	Oct 24, 2023		Soil	S23-No0009738		X	X
5	TS5B	Oct 31, 2023		Water	S23-No0009769	X		
6	TS6B	Nov 01, 2023		Water	S23-No0009770	X		
Test Counts						2	4	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	70			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	73			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	73			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	67			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	72			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	80			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	75			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	74			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	75			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	64			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	75			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	76			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	75			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	90			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	74			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	75			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	68			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	71			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	74			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	104			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	83			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	65			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorohexanesulfonic acid (PFHxS)	%	68			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	62			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	77			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	85			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	74			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	68			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	71			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	77			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	71			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	72			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	72			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	69			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	71			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	80			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	72			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	74			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	71			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	69			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	72			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	75			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	82			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	91			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	77			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	77			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	70			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	79			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	81			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	85			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	62			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	64			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	65			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	66			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	73			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	75			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	60			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	66			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	70			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-No0009738	CP	%	70			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-No0009738	CP	%	73			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0009738	CP	%	72			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0009738	CP	%	67			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0009738	CP	%	71			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-No0009738	CP	%	81			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0009738	CP	%	72			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0009738	CP	%	72			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0009738	CP	%	71			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0009738	CP	%	65			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0009738	CP	%	73			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-No0009738	CP	%	80			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0009738	CP	%	77			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0009738	CP	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0009738	CP	%	78			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0009738	CP	%	74			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0009738	CP	%	74			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0009738	CP	%	71			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-No0009738	CP	%	73			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0009738	CP	%	89			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0009738	CP	%	81			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0009738	CP	%	66			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0009738	CP	%	67			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0009738	CP	%	58			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0009738	CP	%	67			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0009738	CP	%	80			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0009738	CP	%	74			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0009738	CP	%	70			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0009738	CP	%	72			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0009738	CP	%	71			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	R23-No0003608	NCP	%	4.6	5.1	10	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-No0010932	NCP	ug/kg	< 5	11	74	30%	Fail	Q15
Perfluoropentanoic acid (PFPeA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-No0010932	NCP	ug/kg	< 5	5.1	19	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-No0010932	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-No0010932	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-No0010932	NCP	ug/kg	< 5	5.3	26	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-No0010932	NCP	ug/kg	28	26	8.2	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-No0010932	NCP	ug/kg	240	140	55	30%	Fail	Q02
Perfluorodecanesulfonic acid (PFDS)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-No0010932	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-No0010932	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

This report has been revised (V2) to amend the sampling date for sample S23-No0009736 as per client request.

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).
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Carroll Lee	Senior Analyst-PFAS
Joseph Edouard	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

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Eurofins Environment Testing Australia Pty Ltd

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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	2301034
Turnaround time:	5 Day
Date/Time received	Nov 3, 2023 5:40 PM
Eurofins reference	1041726

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 : 2.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:**

Purchase Order No: PO#6088SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	TS1b	19/10	✓					Please SEND																				✓		
	TS2b	19/10	✓					TO EUROFINS																				✓		
	TS3b	23/10	✓					MELBOURNE																				✓		
	TS4b	24/10	✓					↓																				✓		
	TS5b	31/10	✓																										✓	
	TS6b	01/10	✓																										✓	

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Sarah Bolton Date/Time: 3/11/23 Signature:

Received by: Date/Time: Signature:

Version: V1
Date Issued: April 2019
Review Date: April 2021

RE: Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Sarah Bolton <SBolton@geo-logix.com.au>

Tue 2023-11-07 11:32 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
Cc:Asim Khan <AsimKhan@eurofins.com>

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Thanks Elizabeth,

I really appreciate your help with this job.

Just wanting to confirm that the triplicate samples (all samples starting with the prefix “TS”) are being sent to Eurofins Melbourne and are being handled as a separate job? These are interlab samples and have a separate purchase order number and are on a separate COC (see the page/PO numbers at the top). They are still included on the summary COC for this job, so I just want to confirm that they are being handled separately.

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, November 7, 2023 11:19 AM
To: Sarah Bolton <SBolton@geo-logix.com.au>
Subject: Eurofins Sample Receipt Advice - Report 1041195 : Site RICHMOND (2301034)

Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

Regards,
Elizabeth Brotherton

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 21 May 2024 11:50 AM
To: #AU25_Enviro_Sample_NSW
Cc: Asim Khan
Subject: 1041726-S sample date amendments

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Asim,

Could please get the following sample dates corrected for Report #1041726-S:

GX Reference	Eurofins Reference	Date
TS2B	**S23-No0009736**	20/10/2023

Kind Regards,

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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Warriewood
NSW 2102

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: **Sarah Bolton**

Report **1044064-W**
Project name RICHMOND
Project ID 2301034
Received Date Nov 14, 2023

Client Sample ID			**GW132**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-No0033091**
Date Sampled			**Nov 13, 2023**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	107
13C5-PFPeA (surr.)	1	%	116
13C5-PFHxA (surr.)	1	%	126
13C4-PFHpA (surr.)	1	%	121
13C8-PFOA (surr.)	1	%	113
13C5-PFNA (surr.)	1	%	112
13C6-PFDA (surr.)	1	%	100
13C2-PFUnDA (surr.)	1	%	84
13C2-PFDoDA (surr.)	1	%	72
13C2-PFTeDA (surr.)	1	%	37
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	113
D3-N-MeFOSA (surr.)	1	%	87

Client Sample ID			GW132
Sample Matrix			Water
Eurofins Sample No.			S23-No0033091
Date Sampled			Nov 13, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	91
D7-N-MeFOSE (surr.)	1	%	92
D9-N-EtFOSE (surr.)	1	%	95
D5-N-EtFOSAA (surr.)	1	%	100
D3-N-MeFOSAA (surr.)	1	%	90
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.04
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.03
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	125
18O2-PFHxS (surr.)	1	%	118
13C8-PFOS (surr.)	1	%	107
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	126
13C2-6:2 FTSA (surr.)	1	%	95
13C2-8:2 FTSA (surr.)	1	%	94
13C2-10:2 FTSA (surr.)	1	%	67
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	0.02
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.02
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.06
Sum of PFASs (n=30)*	0.1	ug/L	0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Nov 14, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Nov 14, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Nov 14, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Nov 14, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Nov 14, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name:	Geo-Logix P/L	**Order No.:**	PO#6132SB	**Received:**	Nov 14, 2023 5:21 PM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	1044064	**Due:**	Nov 15, 2023
		Phone:	02 9979 1722	**Priority:**	1 Day
		Fax:	02 9979 1222	**Contact Name:**	Sarah Bolton
Project Name:	RICHMOND				
Project ID:	2301034				

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	GW132	Nov 13, 2023		Water	S23-No0033091	X
Test Counts						1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30%; however the following acceptance guidelines are equally applicable: Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported, have been reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	119			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	114			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	110			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	122			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	126			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	129			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	128			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	134			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	131			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	130			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	118			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	120			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	130			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	116			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	119			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	127			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	131			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	122			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	103			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	119			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	120			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	112			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	132			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	132			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	132			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-No0033091	CP	%	116			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-No0033091	CP	%	110			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0033091	CP	%	111			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0033091	CP	%	116			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0033091	CP	%	120			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-No0033091	CP	%	118			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0033091	CP	%	126			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0033091	CP	%	126			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0033091	CP	%	119			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0033091	CP	%	122			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-No0016677	NCP	%	98			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0016677	NCP	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0016677	NCP	%	95			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0016677	NCP	%	105			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0016677	NCP	%	106			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0016677	NCP	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0016677	NCP	%	113			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-No0016677	NCP	%	109			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0016677	NCP	%	92			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0016677	NCP	%	96			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0016677	NCP	%	99			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0016677	NCP	%	112			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0016677	NCP	%	110			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0016677	NCP	%	98			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0016677	NCP	%	114			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0016677	NCP	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0016677	NCP	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0016677	NCP	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluoropentanoic acid (PFPeA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0018929	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0018929	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Adam Bateup Analytical Services Manager



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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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	2301034
Turnaround time:	1 Day
Date/Time received	Nov 14, 2023 5:21 PM
Eurofins reference	1044064

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 : 13.4 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:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 14/11/23

Page 1 of 1
Purchase Order No: PO#6132SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: ASAP/24 h

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compounds	Hold	SUITE
	GW132	13/11/23		✓																							✓			

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S Bolton Date/Time: 14/11/23 Signature:
Laura 14/11/23

Received by: Rchir Date/Time: 14/11/24 Signature:
17:21 13.4

1044064

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Sarah Bolton**

Report **1044106-W-V2**
Project name RICHMOND
Project ID 2301034
Received Date Nov 14, 2023

Client Sample ID			**GW116**	**GW117**	**GW118**	**GW119**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-No0033333**	**S23-No0033334**	**S23-No0033335**	**S23-No0033336**
Date Sampled			**Nov 10, 2023**	**Nov 10, 2023**	**Nov 10, 2023**	**Nov 10, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	115	104	107	100
13C5-PFPeA (surr.)	1	%	128	110	116	113
13C5-PFHxA (surr.)	1	%	139	119	128	121
13C4-PFHpA (surr.)	1	%	130	114	120	110
13C8-PFOA (surr.)	1	%	134	117	122	114
13C5-PFNA (surr.)	1	%	128	114	116	115
13C6-PFDA (surr.)	1	%	124	108	109	111
13C2-PFUnDA (surr.)	1	%	118	100	102	104
13C2-PFDoDA (surr.)	1	%	93	91	81	94
13C2-PFTeDA (surr.)	1	%	40	63	41	52
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	123	107	109	104
D3-N-MeFOSA (surr.)	1	%	76	73	83	69

Client Sample ID			GW116	GW117	GW118	GW119
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033333	S23-No0033334	S23-No0033335	S23-No0033336
Date Sampled			Nov 10, 2023	Nov 10, 2023	Nov 10, 2023	Nov 10, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	84	80	86	72
D7-N-MeFOSE (surr.)	1	%	95	84	92	80
D9-N-EtFOSE (surr.)	1	%	101	87	91	86
D5-N-EtFOSAA (surr.)	1	%	104	89	95	93
D3-N-MeFOSAA (surr.)	1	%	106	87	84	79
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.03
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.02
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.11
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	128	117	119	115
18O2-PFHxS (surr.)	1	%	130	119	118	113
13C8-PFOS (surr.)	1	%	118	105	113	101
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	187	161	177	173
13C2-6:2 FTSA (surr.)	1	%	156	135	133	129
13C2-8:2 FTSA (surr.)	1	%	184	146	139	155
13C2-10:2 FTSA (surr.)	1	%	113	101	95	92
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.11
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.11
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.14
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	0.17

Client Sample ID			GW121	GW122	GW123	GW124
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033337	S23-No0033338	S23-No0033339	S23-No0033340
Date Sampled			Nov 10, 2023	Nov 10, 2023	Nov 10, 2023	Nov 10, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW121	GW122	GW123	GW124
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033337	S23-No0033338	S23-No0033339	S23-No0033340
Date Sampled			Nov 10, 2023	Nov 10, 2023	Nov 10, 2023	Nov 10, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	107	113	109	109
13C5-PFPeA (surr.)	1	%	121	127	117	121
13C5-PFHxA (surr.)	1	%	129	131	130	129
13C4-PFHpA (surr.)	1	%	122	122	115	124
13C8-PFOA (surr.)	1	%	126	122	123	124
13C5-PFNA (surr.)	1	%	119	127	120	122
13C6-PFDA (surr.)	1	%	114	120	112	113
13C2-PFUnDA (surr.)	1	%	103	110	109	107
13C2-PFDoDA (surr.)	1	%	89	100	94	92
13C2-PFTeDA (surr.)	1	%	58	59	60	42
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	111	113	114	117
D3-N-MeFOSA (surr.)	1	%	79	85	82	78
D5-N-EtFOSA (surr.)	1	%	82	88	88	82
D7-N-MeFOSE (surr.)	1	%	89	87	84	87
D9-N-EtFOSE (surr.)	1	%	88	91	91	90
D5-N-EtFOSAA (surr.)	1	%	94	99	95	93
D3-N-MeFOSAA (surr.)	1	%	96	94	97	92
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	116	127	124	129
18O2-PFHxS (surr.)	1	%	124	119	124	122
13C8-PFOS (surr.)	1	%	111	115	116	116

Client Sample ID			GW121	GW122	GW123	GW124
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033337	S23-No0033338	S23-No0033339	S23-No0033340
Date Sampled			Nov 10, 2023	Nov 10, 2023	Nov 10, 2023	Nov 10, 2023
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	INT	187	180	184
13C2-6:2 FTSA (surr.)	1	%	145	150	138	144
13C2-8:2 FTSA (surr.)	1	%	156	INT	156	168
13C2-10:2 FTSA (surr.)	1	%	101	110	105	96
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW125	GW126	GW127	GW128
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033341	S23-No0033342	S23-No0033343	S23-No0033344
Date Sampled			Nov 13, 2023	Nov 13, 2023	Nov 13, 2023	Nov 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	103	107	108	110
13C5-PFPeA (surr.)	1	%	112	116	121	118
13C5-PFHxA (surr.)	1	%	120	130	128	129
13C4-PFHpA (surr.)	1	%	117	116	121	128
13C8-PFOA (surr.)	1	%	119	121	124	124
13C5-PFNA (surr.)	1	%	115	116	120	124
13C6-PFDA (surr.)	1	%	115	115	119	119
13C2-PFUnDA (surr.)	1	%	100	104	105	107
13C2-PFDoDA (surr.)	1	%	90	91	89	86
13C2-PFTeDA (surr.)	1	%	66	52	47	48

Client Sample ID			GW125	GW126	GW127	GW128
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033341	S23-No0033342	S23-No0033343	S23-No0033344
Date Sampled			Nov 13, 2023	Nov 13, 2023	Nov 13, 2023	Nov 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	104	104	114	114
D3-N-MeFOSA (surr.)	1	%	71	63	77	80
D5-N-EtFOSA (surr.)	1	%	75	71	81	87
D7-N-MeFOSE (surr.)	1	%	87	82	92	94
D9-N-EtFOSE (surr.)	1	%	88	88	95	100
D5-N-EtFOSAA (surr.)	1	%	89	98	102	94
D3-N-MeFOSAA (surr.)	1	%	86	89	95	93
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.07
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.03
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.03
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.17
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	111	123	120	121
18O2-PFHxS (surr.)	1	%	117	121	121	120
13C8-PFOS (surr.)	1	%	100	113	112	114
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	165	173	173	178
13C2-6:2 FTSA (surr.)	1	%	138	143	146	148
13C2-8:2 FTSA (surr.)	1	%	146	164	142	142
13C2-10:2 FTSA (surr.)	1	%	91	98	93	95
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.17
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.17
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.25
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	0.31

Client Sample ID			GW129	GW130	GW131	GW133
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033345	S23-No0033346	S23-No0033347	S23-No0033349
Date Sampled			Nov 13, 2023	Nov 13, 2023	Nov 13, 2023	Nov 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.14	0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.29	0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	1.5	0.02	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	0.20	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	0.24	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	111	103	110	114
13C5-PFPeA (surr.)	1	%	120	110	118	119
13C5-PFHxA (surr.)	1	%	129	109	134	135
13C4-PFHpA (surr.)	1	%	118	109	124	123
13C8-PFOA (surr.)	1	%	122	117	124	132
13C5-PFNA (surr.)	1	%	116	116	119	128
13C6-PFDA (surr.)	1	%	114	117	107	120
13C2-PFUnDA (surr.)	1	%	105	109	98	102
13C2-PFDoDA (surr.)	1	%	95	93	90	83
13C2-PFTeDA (surr.)	1	%	49	49	55	36
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	109	110	104	110
D3-N-MeFOSA (surr.)	1	%	79	81	67	76
D5-N-EtFOSA (surr.)	1	%	81	87	73	81
D7-N-MeFOSE (surr.)	1	%	86	85	74	91
D9-N-EtFOSE (surr.)	1	%	88	87	77	91
D5-N-EtFOSAA (surr.)	1	%	94	96	80	92
D3-N-MeFOSAA (surr.)	1	%	89	89	85	93
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	2.5	0.03	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.82	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	2.2	0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	8.7	0.07	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	0.25	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	0.32	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW129	GW130	GW131	GW133
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033345	S23-No0033346	S23-No0033347	S23-No0033349
Date Sampled			Nov 13, 2023	Nov 13, 2023	Nov 13, 2023	Nov 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	120	111	126	128
18O2-PFHxS (surr.)	1	%	118	102	124	125
13C8-PFOS (surr.)	1	%	112	115	111	117
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	185	181	190	INT
13C2-6:2 FTSA (surr.)	1	%	140	136	154	153
13C2-8:2 FTSA (surr.)	1	%	138	164	135	163
13C2-10:2 FTSA (surr.)	1	%	92	96	88	89
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	9.02	0.07	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.56	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	9.26	0.07	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	13.89	0.18	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	17.16	0.19	< 0.1

Client Sample ID			GW134	DW3	DW4	DW5
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033350	S23-No0033351	S23-No0033352	S23-No0033353
Date Sampled			Nov 13, 2023	Nov 10, 2023	Nov 13, 2023	Nov 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.02	0.02	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.01	0.02	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	110	106	114	110
13C5-PFPeA (surr.)	1	%	117	116	120	118
13C5-PFHxA (surr.)	1	%	125	131	130	127
13C4-PFHpA (surr.)	1	%	122	117	121	124
13C8-PFOA (surr.)	1	%	121	121	126	118
13C5-PFNA (surr.)	1	%	121	121	125	127
13C6-PFDA (surr.)	1	%	118	114	112	114
13C2-PFUnDA (surr.)	1	%	107	101	96	90

Client Sample ID			GW134	DW3	DW4	DW5
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033350	S23-No0033351	S23-No0033352	S23-No0033353
Date Sampled			Nov 13, 2023	Nov 10, 2023	Nov 13, 2023	Nov 13, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C2-PFDoDA (surr.)	1	%	93	85	78	75
13C2-PFTeDA (surr.)	1	%	59	52	46	52
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	118	106	110	107
D3-N-MeFOSA (surr.)	1	%	95	79	76	59
D5-N-EtFOSA (surr.)	1	%	102	78	68	59
D7-N-MeFOSE (surr.)	1	%	93	72	69	63
D9-N-EtFOSE (surr.)	1	%	97	77	72	67
D5-N-EtFOSAA (surr.)	1	%	102	83	79	81
D3-N-MeFOSAA (surr.)	1	%	95	86	84	82
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.02	0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	0.03	0.02	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	119	118	128	123
18O2-PFHxS (surr.)	1	%	120	118	123	122
13C8-PFOS (surr.)	1	%	112	112	113	116
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	173	INT	195	177
13C2-6:2 FTSA (surr.)	1	%	139	151	153	142
13C2-8:2 FTSA (surr.)	1	%	161	141	148	147
13C2-10:2 FTSA (surr.)	1	%	91	95	83	81

Client Sample ID			GW134	DW3	DW4	DW5
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033350	S23-No0033351	S23-No0033352	S23-No0033353
Date Sampled			Nov 13, 2023	Nov 10, 2023	Nov 13, 2023	Nov 13, 2023
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.05	0.03	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.03	0.03	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.05	0.04	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	0.08	0.08	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			DGW16	R1	R2	FRB1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033354	S23-No0033355	S23-No0033356	S23-No0033357
Date Sampled			Nov 10, 2023	Nov 10, 2023	Nov 13, 2023	Nov 10, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	113	106	104	104
13C5-PFPeA (surr.)	1	%	121	109	113	111
13C5-PFHxA (surr.)	1	%	134	125	125	129
13C4-PFHpA (surr.)	1	%	128	118	120	110
13C8-PFOA (surr.)	1	%	127	119	121	116
13C5-PFNA (surr.)	1	%	124	121	119	117
13C6-PFDA (surr.)	1	%	119	116	119	112
13C2-PFUnDA (surr.)	1	%	110	111	108	102
13C2-PFDoDA (surr.)	1	%	96	94	93	85
13C2-PFTeDA (surr.)	1	%	54	55	55	54
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	111	112	114	111
D3-N-MeFOSA (surr.)	1	%	80	84	84	75

Client Sample ID			DGW16	R1	R2	FRB1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-No0033354	S23-No0033355	S23-No0033356	S23-No0033357
Date Sampled			Nov 10, 2023	Nov 10, 2023	Nov 13, 2023	Nov 10, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	83	91	90	80
D7-N-MeFOSE (surr.)	1	%	92	93	92	89
D9-N-EtFOSE (surr.)	1	%	91	97	95	94
D5-N-EtFOSAA (surr.)	1	%	89	99	95	99
D3-N-MeFOSAA (surr.)	1	%	93	92	92	94
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	127	118	116	121
18O2-PFHxS (surr.)	1	%	125	117	118	116
13C8-PFOS (surr.)	1	%	121	115	115	110
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	182	INT	172	169
13C2-6:2 FTSA (surr.)	1	%	156	142	132	139
13C2-8:2 FTSA (surr.)	1	%	137	161	139	125
13C2-10:2 FTSA (surr.)	1	%	95	97	96	86
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Nov 16, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
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NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO#6130SB
Report #: 1044106
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Nov 14, 2023 5:21 PM
Due: Nov 21, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	GW116	Nov 10, 2023		Water	S23-No0033333	X
2	GW117	Nov 10, 2023		Water	S23-No0033334	X
3	GW118	Nov 10, 2023		Water	S23-No0033335	X
4	GW119	Nov 10, 2023		Water	S23-No0033336	X
5	GW121	Nov 10, 2023		Water	S23-No0033337	X
6	GW122	Nov 10, 2023		Water	S23-No0033338	X
7	GW123	Nov 10, 2023		Water	S23-No0033339	X
8	GW124	Nov 10, 2023		Water	S23-No0033340	X
9	GW125	Nov 13, 2023		Water	S23-No0033341	X
10	GW126	Nov 13, 2023		Water	S23-No0033342	X
11	GW127	Nov 13, 2023		Water	S23-No0033343	X
12	GW128	Nov 13, 2023		Water	S23-No0033344	X
13	GW129	Nov 13, 2023		Water	S23-No0033345	X
14	GW130	Nov 13, 2023		Water	S23-No0033346	X

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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Project Name: RICHMOND
Project ID: 2301034

Order No.: PO#6130SB
Report #: 1044106
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Nov 14, 2023 5:21 PM
Due: Nov 21, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X
15	GW131	Nov 13, 2023		Water	S23-No0033347	X
16	GW133	Nov 13, 2023		Water	S23-No0033349	X
17	GW134	Nov 13, 2023		Water	S23-No0033350	X
18	DW3	Nov 10, 2023		Water	S23-No0033351	X
19	DW4	Nov 13, 2023		Water	S23-No0033352	X
20	DW5	Nov 13, 2023		Water	S23-No0033353	X
21	DGW16	Nov 10, 2023		Water	S23-No0033354	X
22	R1	Nov 10, 2023		Water	S23-No0033355	X
23	R2	Nov 13, 2023		Water	S23-No0033356	X
24	FRB1	Nov 10, 2023		Water	S23-No0033357	X
Test Counts						24

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	106			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	103			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	109			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	111			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	108			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	116			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	112			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	108			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	111			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	88			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	104			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	109			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	109			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	102			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	100			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	91			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	91			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	101			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	105			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	105			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-No0033333	CP	%	107			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-No0033333	CP	%	110			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0033333	CP	%	106			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0033333	CP	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0033333	CP	%	115			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-No0033333	CP	%	108			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0033333	CP	%	118			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0033333	CP	%	115			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0033333	CP	%	109			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0033333	CP	%	119			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-No0033333	CP	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0033333	CP	%	99			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0033333	CP	%	100			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0033333	CP	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0033333	CP	%	105			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0033333	CP	%	108			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0033333	CP	%	113			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-No0033333	CP	%	107			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0033333	CP	%	97			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0033333	CP	%	97			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0033333	CP	%	100			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0033333	CP	%	106			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0033333	CP	%	109			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0033333	CP	%	103			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0033333	CP	%	106			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0033333	CP	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0033333	CP	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0033333	CP	%	102			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-No0033355	CP	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-No0033355	CP	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0033355	CP	%	107			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0033355	CP	%	104			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0033355	CP	%	104			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-No0033355	CP	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0033355	CP	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0033355	CP	%	112			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0033355	CP	%	108			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0033355	CP	%	116			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-No0033355	CP	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0033355	CP	%	86			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0033355	CP	%	92			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0033355	CP	%	97			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0033355	CP	%	97			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0033355	CP	%	104			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0033355	CP	%	107			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-No0033355	CP	%	101			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0033355	CP	%	87			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0033355	CP	%	86			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0033355	CP	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0033355	CP	%	103			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0033355	CP	%	107			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0033355	CP	%	99			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0033355	CP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0033355	CP	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0033355	CP	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0033355	CP	%	94			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-No0022884	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluoropentanoic acid (PFPeA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0033334	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0033334	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluoropentanoic acid (PFPeA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0033342	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0033342	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluoropentanoic acid (PFPeA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-No0033354	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-No0033354	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) to amend the sampling date for S23-No0033356 from 10/11/2023 to 13/11/2023 as per COC.

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:

Asim Khan	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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Geo-Logix P/L
Contact name: Sarah Bolton
Project name: RICHMOND
Project ID: 2301034
Turnaround time: 5 Day
Date/Time received Nov 14, 2023 5:21 PM
Eurofins reference 1044106

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 : 13.4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au; dgregory@"
Project Name: Richmond
Project Number: 2301034 Date Submitted: 14/11/23

Purchase Order No: PO#6130SB
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds	Hold	SUITE
	GW116	10/11/23		✓																							✓		
	GW117	↓		✓																							✓		
	GW118			✓																							✓		
	GW119			✓																							✓		
	GW121			✓																							✓		
	GW122			✓																							✓		
	GW123			✓																							✓		
	GW124	↓		✓																							✓		
	GW125	13/11/23		✓																							✓		
	GW126			✓																							✓		
	GW127			✓																							✓		
	GW128			✓																							✓		
	GW129			✓																							✓		
	GW130			✓																							✓		
	GW131			✓																							✓		
	GW133			✓																							✓		
	GW134	↓		✓																							✓		
	~~GW135~~	—		✗																							✗		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S. Bolton Date/Time: 14/11/23 Signature:
Received by: Tahir Date/Time: 14/11/23 Signature:

Courier 14/11/2023 17:21 13.4 1044106

Version: V1
Date Issued: April 2019
Review Date: April 2021

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 14/11/23

Purchase Order No: PO#6130SB
Quote Reference: 230714GLxN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	DW3	10/11/23		✓																							✓			
	DW4	13/11/23		✓																							✓			
	DW5	↓		✓																							✓			
	DGW1b	10/11/23		✓																							✓			
	R1	10/11/23		✓																							✓			
	R2	13/11/23		✓																							✓			
	FRB1	10/11/23		✓																							✓			

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S. Bolton Date/Time: 14/11/23 Signature:
Received by: Tahir Date/Time: 14/11/23 Signature:

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Sarah Bolton**

Report **1044108-W-V2**
Project name RICHMOND
Project ID 2301034
Received Date Nov 14, 2023

Client Sample ID			**TGW1B**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-No0033364**
Date Sampled			**Oct 10, 2023**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	95
13C5-PFPeA (surr.)	1	%	139
13C5-PFHxA (surr.)	1	%	132
13C4-PFHpA (surr.)	1	%	137
13C8-PFOA (surr.)	1	%	116
13C5-PFNA (surr.)	1	%	131
13C6-PFDA (surr.)	1	%	135
13C2-PFUnDA (surr.)	1	%	115
13C2-PFDoDA (surr.)	1	%	78
13C2-PFTeDA (surr.)	1	%	28
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	141
D3-N-MeFOSA (surr.)	1	%	47

Client Sample ID			TGW1B
Sample Matrix			Water
Eurofins Sample No.			S23-No0033364
Date Sampled			Oct 10, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	47
D7-N-MeFOSE (surr.)	1	%	64
D9-N-EtFOSE (surr.)	1	%	62
D5-N-EtFOSAA (surr.)	1	%	138
D3-N-MeFOSAA (surr.)	1	%	104
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	134
18O2-PFHxS (surr.)	1	%	147
13C8-PFOS (surr.)	1	%	117
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	92
13C2-6:2 FTSA (surr.)	1	%	134
13C2-8:2 FTSA (surr.)	1	%	118
13C2-10:2 FTSA (surr.)	1	%	99
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Nov 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Nov 14, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO#6131
Report #: 1044108
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Nov 14, 2023 5:21 PM
Due: Nov 21, 2023
Priority: 5 Day
Contact Name: Sarah Bolton

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	TGW1B	Oct 10, 2023		Water	S23-No0033364	X
Test Counts						1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	67			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	66			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	64			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	63			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	65			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	64			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	68			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	67			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	69			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	52			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	67			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	74			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	74			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	80			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	69			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	71			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	73			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	69			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	63			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	60			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	72			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	76			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	66			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	72			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	69			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	53			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	64			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	73			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	68			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	73			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-No0036949	NCP	%	70			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-No0036949	NCP	%	69			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-No0036949	NCP	%	66			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-No0036949	NCP	%	66			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-No0036949	NCP	%	68			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-No0036949	NCP	%	68			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-No0036949	NCP	%	72			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-No0036949	NCP	%	71			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-No0036949	NCP	%	71			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-No0036949	NCP	%	63			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-No0036949	NCP	%	70			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-No0036949	NCP	%	76			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-No0036949	NCP	%	74			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-No0036949	NCP	%	84			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-No0036949	NCP	%	74			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-No0036949	NCP	%	72			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-No0036949	NCP	%	76			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-No0036949	NCP	%	71			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-No0036949	NCP	%	68			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-No0036949	NCP	%	59			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-No0036949	NCP	%	75			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-No0036949	NCP	%	78			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-No0036949	NCP	%	68			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-No0036949	NCP	%	84			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-No0036949	NCP	%	73			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-No0032583	NCP	%	56			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-No0036949	NCP	%	71			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-No0036949	NCP	%	72			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-No0036949	NCP	%	74			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-No0036949	NCP	%	70			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-No0036948	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-No0036948	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) to amend the sampling date for S23-No0033364.

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:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Sarah Bolton
Project name:	RICHMOND
Project ID:	2301034
Turnaround time:	5 Day
Date/Time received	Nov 14, 2023 5:21 PM
Eurofins reference	1044108

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 : 13.4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Sample forwarded to Melbourne Eurofins.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Sarah Bolton - SBolton@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

CHAIN OF CUSTODY

PLEASE SEND TO EUROFINS MELBOURNE

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

Project Manager: Sarah Bolton
Contact email: sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 **Date Submitted:** 14/11/23

Page 1 of 1
Purchase Order No: PO#6131
Quote Reference: 230714GLxN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds		Hold	SUITE
	TGW1b	10/11/23		✓				PLEASE SEND TO EUROFINS MELBOURNE																				✓		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S.Bolton Date/Time: 14/11/23 Signature:
Received by: Tahir Date/Time: 14/11/23 Signature:

14/11/2023 17:21 pm 13.4 1044108

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **David Gregory**

Report **1050296-S-V3**
Project name RICHMOND
Project ID 2301034
Received Date Dec 04, 2023

Client Sample ID			GX135/0.4-0.5	GX135/1.4-1.5	GX136/0.4-0.5	GX137/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005737	S23-De0005738	S23-De0005739	S23-De0005740
Date Sampled			Nov 23, 2023	Nov 23, 2023	Nov 22, 2023	Nov 22, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	12	36	9.6	5.8
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	81	80	84	82
13C5-PFPeA (surr.)	1	%	89	86	91	87
13C5-PFHxA (surr.)	1	%	96	83	94	87
13C4-PFHpA (surr.)	1	%	88	78	88	87
13C8-PFOA (surr.)	1	%	84	82	88	86
13C5-PFNA (surr.)	1	%	85	91	93	91
13C6-PFDA (surr.)	1	%	95	91	95	90
13C2-PFUnDA (surr.)	1	%	105	105	98	95
13C2-PFDoDA (surr.)	1	%	104	100	100	102
13C2-PFTeDA (surr.)	1	%	123	107	107	106
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			GX135/0.4-0.5	GX135/1.4-1.5	GX136/0.4-0.5	GX137/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005737	S23-De0005738	S23-De0005739	S23-De0005740
Date Sampled			Nov 23, 2023	Nov 23, 2023	Nov 22, 2023	Nov 22, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	90	88	89	88
D3-N-MeFOSA (surr.)	1	%	91	81	99	86
D5-N-EtFOSA (surr.)	1	%	102	87	98	92
D7-N-MeFOSE (surr.)	1	%	96	88	82	89
D9-N-EtFOSE (surr.)	1	%	94	82	89	86
D5-N-EtFOSAA (surr.)	1	%	128	117	113	114
D3-N-MeFOSAA (surr.)	1	%	105	113	113	99
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	90	82	94	87
18O2-PFHxS (surr.)	1	%	92	80	79	82
13C8-PFOS (surr.)	1	%	98	92	99	92
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	85	84	99	82
13C2-6:2 FTSA (surr.)	1	%	85	77	94	83
13C2-8:2 FTSA (surr.)	1	%	78	77	85	94
13C2-10:2 FTSA (surr.)	1	%	136	162	145	121
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX138/0.4-0.5	GX138/1.4-1.5	GX139/0.4-0.5	GX139/2.9-3.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005741	S23-De0005742	S23-De0005743	S23-De0005744
Date Sampled			Nov 22, 2023	Nov 22, 2023	Nov 24, 2023	Nov 24, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	4.2	17	13	22
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	98	88	84	97
13C5-PFPeA (surr.)	1	%	108	98	93	108
13C5-PFHxA (surr.)	1	%	106	94	87	106
13C4-PFHpA (surr.)	1	%	111	92	85	100
13C8-PFOA (surr.)	1	%	105	90	90	103
13C5-PFNA (surr.)	1	%	107	97	94	109
13C6-PFDA (surr.)	1	%	114	105	95	113
13C2-PFUnDA (surr.)	1	%	124	107	103	119
13C2-PFDoDA (surr.)	1	%	134	125	112	122
13C2-PFTeDA (surr.)	1	%	136	124	109	145
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	112	97	82	100
D3-N-MeFOSA (surr.)	1	%	104	95	89	117
D5-N-EtFOSA (surr.)	1	%	111	102	88	122
D7-N-MeFOSE (surr.)	1	%	113	91	92	111
D9-N-EtFOSE (surr.)	1	%	102	94	91	113
D5-N-EtFOSAA (surr.)	1	%	135	149	125	136
D3-N-MeFOSAA (surr.)	1	%	127	136	108	123
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5

Client Sample ID			GX138/0.4-0.5	GX138/1.4-1.5	GX139/0.4-0.5	GX139/2.9-3.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005741	S23-De0005742	S23-De0005743	S23-De0005744
Date Sampled			Nov 22, 2023	Nov 22, 2023	Nov 24, 2023	Nov 24, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	106	97	88	103
18O2-PFHxS (surr.)	1	%	93	94	87	99
13C8-PFOS (surr.)	1	%	115	102	94	117
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	106	115	92	142
13C2-6:2 FTSA (surr.)	1	%	111	85	94	125
13C2-8:2 FTSA (surr.)	1	%	104	100	80	113
13C2-10:2 FTSA (surr.)	1	%	171	194	159	181
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX140/0.4-0.5	GX140/1.4-1.5	GX141/0.4-0.5	GX141/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005745	S23-De0005746	S23-De0005747	S23-De0005748
Date Sampled			Nov 24, 2023	Nov 24, 2023	Nov 27, 2023	Nov 27, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	19	14	14	12
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	81	86	85	88
13C5-PFPeA (surr.)	1	%	85	87	91	95
13C5-PFHxA (surr.)	1	%	88	95	93	102
13C4-PFHpA (surr.)	1	%	85	92	95	96

Client Sample ID			GX140/0.4-0.5	GX140/1.4-1.5	GX141/0.4-0.5	GX141/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005745	S23-De0005746	S23-De0005747	S23-De0005748
Date Sampled			Nov 24, 2023	Nov 24, 2023	Nov 27, 2023	Nov 27, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C8-PFOA (surr.)	1	%	80	94	89	97
13C5-PFNA (surr.)	1	%	86	95	96	104
13C6-PFDA (surr.)	1	%	86	97	104	110
13C2-PFUnDA (surr.)	1	%	96	100	100	126
13C2-PFDoDA (surr.)	1	%	102	114	115	130
13C2-PFTeDA (surr.)	1	%	102	121	127	138
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	89	94	95	103
D3-N-MeFOSA (surr.)	1	%	80	97	112	97
D5-N-EtFOSA (surr.)	1	%	86	97	102	105
D7-N-MeFOSE (surr.)	1	%	82	89	93	98
D9-N-EtFOSE (surr.)	1	%	87	98	95	97
D5-N-EtFOSAA (surr.)	1	%	113	101	126	167
D3-N-MeFOSAA (surr.)	1	%	95	103	122	152
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	90	102	87	95
18O2-PFHxS (surr.)	1	%	78	87	88	90
13C8-PFOS (surr.)	1	%	88	98	101	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	76	97	90	105
13C2-6:2 FTSA (surr.)	1	%	72	103	106	107
13C2-8:2 FTSA (surr.)	1	%	74	99	101	113
13C2-10:2 FTSA (surr.)	1	%	140	147	152	INT

Client Sample ID			GX140/0.4-0.5	GX140/1.4-1.5	GX141/0.4-0.5	GX141/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005745	S23-De0005746	S23-De0005747	S23-De0005748
Date Sampled			Nov 24, 2023	Nov 24, 2023	Nov 27, 2023	Nov 27, 2023
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX142/0.4-0.5	GX142/2.0-2.1	GX143/0.4-0.5	GX145/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005749	S23-De0005750	S23-De0005751	S23-De0005753
Date Sampled			Nov 27, 2023	Nov 27, 2023	Nov 28, 2023	Nov 29, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	9.0	17	14	7.8
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	88	88	85	82
13C5-PFPeA (surr.)	1	%	92	98	93	91
13C5-PFHxA (surr.)	1	%	98	96	95	103
13C4-PFHpA (surr.)	1	%	97	101	93	91
13C8-PFOA (surr.)	1	%	88	97	88	93
13C5-PFNA (surr.)	1	%	95	104	96	96
13C6-PFDA (surr.)	1	%	102	105	92	91
13C2-PFUnDA (surr.)	1	%	112	107	111	108
13C2-PFDoDA (surr.)	1	%	121	107	114	110
13C2-PFTeDA (surr.)	1	%	122	125	122	126
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			GX142/0.4-0.5	GX142/2.0-2.1	GX143/0.4-0.5	GX145/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005749	S23-De0005750	S23-De0005751	S23-De0005753
Date Sampled			Nov 27, 2023	Nov 27, 2023	Nov 28, 2023	Nov 29, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	100	103	99	106
D3-N-MeFOSA (surr.)	1	%	103	93	105	98
D5-N-EtFOSA (surr.)	1	%	100	99	99	110
D7-N-MeFOSE (surr.)	1	%	98	102	91	94
D9-N-EtFOSE (surr.)	1	%	97	99	99	102
D5-N-EtFOSAA (surr.)	1	%	156	134	133	86
D3-N-MeFOSAA (surr.)	1	%	136	125	128	72
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	94	95	89	103
18O2-PFHxS (surr.)	1	%	89	92	88	90
13C8-PFOS (surr.)	1	%	101	104	99	102
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	89	94	95	78
13C2-6:2 FTSA (surr.)	1	%	99	85	88	87
13C2-8:2 FTSA (surr.)	1	%	98	84	95	98
13C2-10:2 FTSA (surr.)	1	%	149	165	165	177
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX145/1.4-1.5	GX146/0.4-0.5	GX146/1.4-1.5	GX147/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005754	S23-De0005755	S23-De0005756	S23-De0005757
Date Sampled			Nov 29, 2023	Nov 30, 2023	Nov 30, 2023	Nov 30, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	13	11	23	13
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	87	86	89	89
13C5-PFPeA (surr.)	1	%	93	90	97	99
13C5-PFHxA (surr.)	1	%	95	98	102	95
13C4-PFHpA (surr.)	1	%	92	92	99	87
13C8-PFOA (surr.)	1	%	91	90	93	87
13C5-PFNA (surr.)	1	%	94	97	102	95
13C6-PFDA (surr.)	1	%	105	94	105	98
13C2-PFUnDA (surr.)	1	%	104	109	118	111
13C2-PFDoDA (surr.)	1	%	117	109	132	111
13C2-PFTeDA (surr.)	1	%	121	127	135	121
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	99	101	103	90
D3-N-MeFOSA (surr.)	1	%	93	94	109	96
D5-N-EtFOSA (surr.)	1	%	99	104	114	104
D7-N-MeFOSE (surr.)	1	%	94	98	99	92
D9-N-EtFOSE (surr.)	1	%	97	96	97	93
D5-N-EtFOSAA (surr.)	1	%	105	123	133	119
D3-N-MeFOSAA (surr.)	1	%	88	119	126	111
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5

Client Sample ID			GX145/1.4-1.5	GX146/0.4-0.5	GX146/1.4-1.5	GX147/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005754	S23-De0005755	S23-De0005756	S23-De0005757
Date Sampled			Nov 29, 2023	Nov 30, 2023	Nov 30, 2023	Nov 30, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	89	99	95	84
18O2-PFHxS (surr.)	1	%	89	91	90	93
13C8-PFOS (surr.)	1	%	108	101	108	108
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	93	107	104	91
13C2-6:2 FTSA (surr.)	1	%	80	107	87	85
13C2-8:2 FTSA (surr.)	1	%	98	82	91	78
13C2-10:2 FTSA (surr.)	1	%	145	156	172	151
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX147/2.9-3.0	GX148/0.4-0.5	GX148/1.4-1.5	GX149/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005758	S23-De0005759	S23-De0005760	S23-De0005761
Date Sampled			Nov 30, 2023	Dec 01, 2023	Dec 01, 2023	Dec 01, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	12	6.5	15	38
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	104	88	88	86
13C5-PFPeA (surr.)	1	%	117	96	101	88
13C5-PFHxA (surr.)	1	%	106	93	98	91
13C4-PFHpA (surr.)	1	%	112	102	100	95

Client Sample ID			GX147/2.9-3.0	GX148/0.4-0.5	GX148/1.4-1.5	GX149/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005758	S23-De0005759	S23-De0005760	S23-De0005761
Date Sampled			Nov 30, 2023	Dec 01, 2023	Dec 01, 2023	Dec 01, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C8-PFOA (surr.)	1	%	111	95	100	88
13C5-PFNA (surr.)	1	%	113	97	99	96
13C6-PFDA (surr.)	1	%	135	101	116	94
13C2-PFUnDA (surr.)	1	%	161	117	124	98
13C2-PFDoDA (surr.)	1	%	163	119	135	111
13C2-PFTeDA (surr.)	1	%	167	124	139	122
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	119	102	104	102
D3-N-MeFOSA (surr.)	1	%	116	97	98	102
D5-N-EtFOSA (surr.)	1	%	130	106	113	102
D7-N-MeFOSE (surr.)	1	%	114	102	96	92
D9-N-EtFOSE (surr.)	1	%	119	106	107	105
D5-N-EtFOSAA (surr.)	1	%	198	142	151	131
D3-N-MeFOSAA (surr.)	1	%	INT	135	144	114
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	113	93	99	99
18O2-PFHxS (surr.)	1	%	110	96	97	90
13C8-PFOS (surr.)	1	%	127	108	109	105
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	110	98	104	96
13C2-6:2 FTSA (surr.)	1	%	104	103	96	99
13C2-8:2 FTSA (surr.)	1	%	120	100	94	105
13C2-10:2 FTSA (surr.)	1	%	INT	INT	184	117

Client Sample ID			GX147/2.9-3.0	GX148/0.4-0.5	GX148/1.4-1.5	GX149/0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005758	S23-De0005759	S23-De0005760	S23-De0005761
Date Sampled			Nov 30, 2023	Dec 01, 2023	Dec 01, 2023	Dec 01, 2023
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			DS5B	GX137/2.9-3.0	GX-149/2.9-3.0	GX143/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005766	S23-De0005767	S23-De0005893	S23-De0005894
Date Sampled			Nov 23, 2023	Nov 22, 2023	Dec 01, 2023	Nov 28, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	6.4	10	10	11
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	86	90	88	89
13C5-PFPeA (surr.)	1	%	95	99	97	93
13C5-PFHxA (surr.)	1	%	97	100	95	100
13C4-PFHpA (surr.)	1	%	90	90	101	96
13C8-PFOA (surr.)	1	%	93	95	91	92
13C5-PFNA (surr.)	1	%	95	99	96	98
13C6-PFDA (surr.)	1	%	97	108	100	102
13C2-PFUnDA (surr.)	1	%	105	129	114	106
13C2-PFDoDA (surr.)	1	%	124	134	111	111
13C2-PFTeDA (surr.)	1	%	123	132	128	136
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			DS5B	GX137/2.9-3.0	GX-149/2.9-3.0	GX143/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0005766	S23-De0005767	S23-De0005893	S23-De0005894
Date Sampled			Nov 23, 2023	Nov 22, 2023	Dec 01, 2023	Nov 28, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	100	104	103	99
D3-N-MeFOSA (surr.)	1	%	101	112	104	110
D5-N-EtFOSA (surr.)	1	%	106	111	116	117
D7-N-MeFOSE (surr.)	1	%	97	100	99	95
D9-N-EtFOSE (surr.)	1	%	99	103	106	101
D5-N-EtFOSAA (surr.)	1	%	120	153	123	118
D3-N-MeFOSAA (surr.)	1	%	125	154	120	102
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	102	96	95	96
18O2-PFHxS (surr.)	1	%	90	98	92	96
13C8-PFOS (surr.)	1	%	104	112	100	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	90	108	96	103
13C2-6:2 FTSA (surr.)	1	%	90	92	82	101
13C2-8:2 FTSA (surr.)	1	%	102	103	104	108
13C2-10:2 FTSA (surr.)	1	%	168	INT	164	169
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX-144/0.4-0.5	GX-136/1.3-1.4	GX-144/2.4-2.5
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S23-De0005896	S23-De0005899	S23-De0005900
Date Sampled			Nov 29, 2023	Nov 22, 2023	Nov 29, 2023
Test/Reference	LOR	Unit			
Sample Properties					
% Moisture	1	%	5.9	13	8.7
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	87	91	91
13C5-PFPeA (surr.)	1	%	91	94	98
13C5-PFHxA (surr.)	1	%	94	97	104
13C4-PFHpA (surr.)	1	%	87	94	96
13C8-PFOA (surr.)	1	%	90	91	93
13C5-PFNA (surr.)	1	%	93	94	94
13C6-PFDA (surr.)	1	%	92	94	97
13C2-PFUnDA (surr.)	1	%	103	106	115
13C2-PFDoDA (surr.)	1	%	113	113	119
13C2-PFTeDA (surr.)	1	%	117	116	125
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	96	93	96
D3-N-MeFOSA (surr.)	1	%	101	90	102
D5-N-EtFOSA (surr.)	1	%	100	99	101
D7-N-MeFOSE (surr.)	1	%	95	91	95
D9-N-EtFOSE (surr.)	1	%	93	93	97
D5-N-EtFOSAA (surr.)	1	%	100	128	131
D3-N-MeFOSAA (surr.)	1	%	81	118	119
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5

Client Sample ID			GX-144/0.4-0.5	GX-136/1.3-1.4	GX-144/2.4-2.5
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S23-De0005896	S23-De0005899	S23-De0005900
Date Sampled			Nov 29, 2023	Nov 22, 2023	Nov 29, 2023
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	98	94	89
18O2-PFHxS (surr.)	1	%	87	84	86
13C8-PFOS (surr.)	1	%	101	99	102
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	96	106	141
13C2-6:2 FTSA (surr.)	1	%	101	97	97
13C2-8:2 FTSA (surr.)	1	%	79	89	83
13C2-10:2 FTSA (surr.)	1	%	151	176	176
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Dec 07, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Dec 07, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO 6145SB
Report #: 1050296
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 4, 2023 3:17 PM
Due: Dec 8, 2023
Priority: 5 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	GX135/0.4-0.5	Nov 23, 2023		Soil	S23-De0005737			X	X
2	GX135/1.4-1.5	Nov 23, 2023		Soil	S23-De0005738			X	X
3	GX136/0.4-0.5	Nov 22, 2023		Soil	S23-De0005739			X	X
4	GX137/0.4-0.5	Nov 22, 2023		Soil	S23-De0005740			X	X
5	GX138/0.4-0.5	Nov 22, 2023		Soil	S23-De0005741			X	X
6	GX138/1.4-1.5	Nov 22, 2023		Soil	S23-De0005742			X	X
7	GX139/0.4-0.5	Nov 24, 2023		Soil	S23-De0005743			X	X
8	GX139/2.9-3.0	Nov 24, 2023		Soil	S23-De0005744			X	X
9	GX140/0.4-0.5	Nov 24, 2023		Soil	S23-De0005745			X	X
10	GX140/1.4-1.5	Nov 24, 2023		Soil	S23-De0005746			X	X
11	GX141/0.4-0.5	Nov 27, 2023		Soil	S23-De0005747			X	X
12	GX141/1.4-1.5	Nov 27, 2023		Soil	S23-De0005748			X	X
13	GX142/0.4-0.5	Nov 27, 2023		Soil	S23-De0005749			X	X
14	GX142/2.0-2.1	Nov 27, 2023		Soil	S23-De0005750			X	X

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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NZBN: 9429046024954

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO 6145SB
Report #: 1050296
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 4, 2023 3:17 PM
Due: Dec 8, 2023
Priority: 5 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
15	GX143/0.4-0.5	Nov 28, 2023		Soil	S23-De0005751			X	X
16	GX144/1.4-1.5	Nov 29, 2023		Soil	S23-De0005752		X		
17	GX145/0.4-0.5	Nov 29, 2023		Soil	S23-De0005753			X	X
18	GX145/1.4-1.5	Nov 29, 2023		Soil	S23-De0005754			X	X
19	GX146/0.4-0.5	Nov 30, 2023		Soil	S23-De0005755			X	X
20	GX146/1.4-1.5	Nov 30, 2023		Soil	S23-De0005756			X	X
21	GX147/0.4-0.5	Nov 30, 2023		Soil	S23-De0005757			X	X
22	GX147/2.9-3.0	Nov 30, 2023		Soil	S23-De0005758			X	X
23	GX148/0.4-0.5	Dec 01, 2023		Soil	S23-De0005759			X	X
24	GX148/1.4-1.5	Dec 01, 2023		Soil	S23-De0005760			X	X
25	GX149/0.4-0.5	Dec 01, 2023		Soil	S23-De0005761			X	X
26	GX149/2.9-3.0	Dec 01, 2023		Soil	S23-De0005762	X			
27	R2	Nov 24, 2023		Water	S23-De0005763				X
28	R5	Nov 29, 2023		Water	S23-De0005764				X
29	BLANK	Nov 22, 2023		Water	S23-De0005765				X
30	DS5B	Nov 23, 2023		Soil	S23-De0005766			X	X
31	GX137/2.9-3.0	Nov 22, 2023		Soil	S23-De0005767			X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
32	GX135/2.9-3.0	Nov 23, 2023		Soil	S23-De0005770	X			
33	GX136/2.9-3.0	Nov 22, 2023		Soil	S23-De0005771		X		
34	GX138/2.9-3.0	Nov 22, 2023		Soil	S23-De0005772		X		
35	GX139/1.4-1.5	Nov 24, 2023		Soil	S23-De0005773		X		
36	GX40/2.9-3.0	Nov 24, 2023		Soil	S23-De0005774		X		
37	GX141/2.9-3.0	Nov 27, 2023		Soil	S23-De0005775		X		
38	GX142/1.4-1.5	Nov 27, 2023		Soil	S23-De0005776		X		
39	GX142/2.9-3.0	Nov 27, 2023		Soil	S23-De0005777		X		
40	GX144/2.9-3.0	Nov 28, 2023		Soil	S23-De0005778		X		
41	GX145/2.9-3.0	Nov 29, 2023		Soil	S23-De0005779		X		
42	GX146/2.9-3.0	Nov 30, 2023		Soil	S23-De0005780		X		
43	GX147/1.4-1.5	Nov 30, 2023		Soil	S23-De0005781		X		
44	GX148/2.9-3.0	Dec 01, 2023		Soil	S23-De0005782		X		
45	GX149/1.4-1.5	Dec 01, 2023		Soil	S23-De0005783		X		
46	R1	Nov 23, 2023		Water	S23-De0005784		X		
47	R3	Nov 27, 2023		Water	S23-De0005785		X		
48	R4	Nov 28, 2023		Water	S23-De0005786		X		

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
49	R6	Nov 30, 2023		Water	S23-De0005787		X		
50	R7	Dec 01, 2023		Water	S23-De0005788	X			
51	DS75	Nov 22, 2023		Soil	S23-De0005891		X		
52	TS7B	Nov 22, 2023		Soil	S23-De0005892		X		
53	GX-149/2.9-3.0	Dec 01, 2023		Soil	S23-De0005893			X	X
54	GX143/1.4-1.5	Nov 28, 2023		Soil	S23-De0005894			X	X
55	GX143/2.9-3.0	Nov 28, 2023		Soil	S23-De0005895		X		
56	GX-144/0.4-0.5	Nov 29, 2023		Soil	S23-De0005896			X	X
57	GX-135/2.9-3.0	Nov 23, 2023		Soil	S23-De0005897		X		
58	GX137/1.0-1.1	Nov 22, 2023		Soil	S23-De0005898		X		
59	GX-136/1.3-1.4	Nov 22, 2023		Soil	S23-De0005899			X	X
60	GX-144/2.4-2.5	Nov 29, 2023		Soil	S23-De0005900			X	X
Test Counts						3	23	31	34

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	101			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	91			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	104			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	95			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	97			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	101			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	98			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	98			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	102			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	87			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	91			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	93			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	97			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroheptanesulfonic acid (PFHpS)	%	90			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	74			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	108			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	107			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	117			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	103			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	111			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	114			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	120			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	113			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	102			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	108			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	107			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	111			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	110			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	112			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	110			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	100			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	106			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	96			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	107			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	101			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	106			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	86			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	113			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	N23-De0000294	NCP	%	107			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	N23-De0000294	NCP	%	127			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	N23-De0000294	NCP	%	124			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	N23-De0000294	NCP	%	112			50-150	Pass	
Perfluorooctanoic acid (PFOA)	N23-De0000294	NCP	%	107			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorononanoic acid (PFNA)	N23-De0000294	NCP	%	95			50-150	Pass	
Perfluorodecanoic acid (PFDA)	N23-De0000294	NCP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	N23-De0000294	NCP	%	106			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	N23-De0000294	NCP	%	109			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	N23-De0000294	NCP	%	100			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	N23-De0000294	NCP	%	112			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	N23-De0000294	NCP	%	99			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N23-De0000294	NCP	%	100			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N23-De0000294	NCP	%	108			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	N23-De0000294	NCP	%	103			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	N23-De0000294	NCP	%	112			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	N23-De0000294	NCP	%	103			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	N23-De0000294	NCP	%	106			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	N23-De0000294	NCP	%	113			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	N23-De0000294	NCP	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	N23-De0000294	NCP	%	102			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	N23-De0000294	NCP	%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N23-De0000294	NCP	%	107			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	N23-De0000294	NCP	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	N23-De0000294	NCP	%	6.7			50-150	Fail	Q05
Perfluorodecanesulfonic acid (PFDS)	N23-De0000294	NCP	%	89			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	N23-De0000294	NCP	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	N23-De0000294	NCP	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	N23-De0000294	NCP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	N23-De0000294	NCP	%	96			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	N23-De0000271	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-De0012228	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-De0012228	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	N23-De0000298	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	N23-De0000298	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	N23-De0000298	NCP	ug/kg	95	95	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	N23-De0000298	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	N23-De0000298	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-De0005746	CP	%	14	15	6.3	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-De0005756	CP	%	23	24	4.0	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-De0005766	CP	%	6.4	5.7	12	30%	Pass	

Comments

This report has been revised (V2) to amend the sampling date of S23-De0005737.

This report has been revised (V3) to amend the sampling date of S23-De0005766 from 22/11/2023 to 23/11/2023 as per client request.

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).
Q05	The matrix spike concentration is less than five times the background concentration in the sample - therefore the spike recovery cannot be determined

Authorised by:

Asim Khan	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-PFAS
Roopesh Rangarajan	Senior Analyst-Sample Properties



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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Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
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Attention: **David Gregory**

Report **1050296-W-V3**
Project name RICHMOND
Project ID 2301034
Received Date Dec 04, 2023

Client Sample ID			**R2**	**R5**	**BLANK**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-De0005763**	**S23-De0005764**	**S23-De0005765**
Date Sampled			**Nov 24, 2023**	**Nov 29, 2023**	**Nov 22, 2023**
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	88	84	86
13C5-PFPeA (surr.)	1	%	98	92	98
13C5-PFHxA (surr.)	1	%	105	90	99
13C4-PFHpA (surr.)	1	%	102	88	89
13C8-PFOA (surr.)	1	%	99	82	83
13C5-PFNA (surr.)	1	%	103	75	74
13C6-PFDA (surr.)	1	%	92	58	58
13C2-PFUnDA (surr.)	1	%	84	43	43
13C2-PFDoDA (surr.)	1	%	86	30	30
13C2-PFTeDA (surr.)	1	%	100	15	18
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	77	82	92
D3-N-MeFOSA (surr.)	1	%	64	65	73

Client Sample ID			R2	R5	BLANK
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S23-De0005763	S23-De0005764	S23-De0005765
Date Sampled			Nov 24, 2023	Nov 29, 2023	Nov 22, 2023
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonamido substances					
D5-N-EtFOSA (surr.)	1	%	62	66	72
D7-N-MeFOSE (surr.)	1	%	68	68	80
D9-N-EtFOSE (surr.)	1	%	69	70	80
D5-N-EtFOSAA (surr.)	1	%	93	61	69
D3-N-MeFOSAA (surr.)	1	%	85	63	65
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	97	93	88
18O2-PFHxS (surr.)	1	%	107	81	81
13C8-PFOS (surr.)	1	%	99	58	61
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	93	90	95
13C2-6:2 FTSA (surr.)	1	%	85	87	94
13C2-8:2 FTSA (surr.)	1	%	80	75	68
13C2-10:2 FTSA (surr.)	1	%	69	40	42
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Dec 06, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Dec 06, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Dec 04, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Dec 04, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Dec 04, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO 6145SB
Report #: 1050296
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 4, 2023 3:17 PM
Due: Dec 8, 2023
Priority: 5 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	GX135/0.4-0.5	Nov 23, 2023		Soil	S23-De0005737			X	X
2	GX135/1.4-1.5	Nov 23, 2023		Soil	S23-De0005738			X	X
3	GX136/0.4-0.5	Nov 22, 2023		Soil	S23-De0005739			X	X
4	GX137/0.4-0.5	Nov 22, 2023		Soil	S23-De0005740			X	X
5	GX138/0.4-0.5	Nov 22, 2023		Soil	S23-De0005741			X	X
6	GX138/1.4-1.5	Nov 22, 2023		Soil	S23-De0005742			X	X
7	GX139/0.4-0.5	Nov 24, 2023		Soil	S23-De0005743			X	X
8	GX139/2.9-3.0	Nov 24, 2023		Soil	S23-De0005744			X	X
9	GX140/0.4-0.5	Nov 24, 2023		Soil	S23-De0005745			X	X
10	GX140/1.4-1.5	Nov 24, 2023		Soil	S23-De0005746			X	X
11	GX141/0.4-0.5	Nov 27, 2023		Soil	S23-De0005747			X	X
12	GX141/1.4-1.5	Nov 27, 2023		Soil	S23-De0005748			X	X
13	GX142/0.4-0.5	Nov 27, 2023		Soil	S23-De0005749			X	X
14	GX142/2.0-2.1	Nov 27, 2023		Soil	S23-De0005750			X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
15	GX143/0.4-0.5	Nov 28, 2023		Soil	S23-De0005751			X	X
16	GX144/1.4-1.5	Nov 29, 2023		Soil	S23-De0005752		X		
17	GX145/0.4-0.5	Nov 29, 2023		Soil	S23-De0005753			X	X
18	GX145/1.4-1.5	Nov 29, 2023		Soil	S23-De0005754			X	X
19	GX146/0.4-0.5	Nov 30, 2023		Soil	S23-De0005755			X	X
20	GX146/1.4-1.5	Nov 30, 2023		Soil	S23-De0005756			X	X
21	GX147/0.4-0.5	Nov 30, 2023		Soil	S23-De0005757			X	X
22	GX147/2.9-3.0	Nov 30, 2023		Soil	S23-De0005758			X	X
23	GX148/0.4-0.5	Dec 01, 2023		Soil	S23-De0005759			X	X
24	GX148/1.4-1.5	Dec 01, 2023		Soil	S23-De0005760			X	X
25	GX149/0.4-0.5	Dec 01, 2023		Soil	S23-De0005761			X	X
26	GX149/2.9-3.0	Dec 01, 2023		Soil	S23-De0005762	X			
27	R2	Nov 24, 2023		Water	S23-De0005763				X
28	R5	Nov 29, 2023		Water	S23-De0005764				X
29	BLANK	Nov 22, 2023		Water	S23-De0005765				X
30	DS5B	Nov 23, 2023		Soil	S23-De0005766			X	X
31	GX137/2.9-3.0	Nov 22, 2023		Soil	S23-De0005767			X	X

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Sample Detail						CANCELLED	HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
32	GX135/2.9-3.0	Nov 23, 2023		Soil	S23-De0005770	X			
33	GX136/2.9-3.0	Nov 22, 2023		Soil	S23-De0005771		X		
34	GX138/2.9-3.0	Nov 22, 2023		Soil	S23-De0005772		X		
35	GX139/1.4-1.5	Nov 24, 2023		Soil	S23-De0005773		X		
36	GX40/2.9-3.0	Nov 24, 2023		Soil	S23-De0005774		X		
37	GX141/2.9-3.0	Nov 27, 2023		Soil	S23-De0005775		X		
38	GX142/1.4-1.5	Nov 27, 2023		Soil	S23-De0005776		X		
39	GX142/2.9-3.0	Nov 27, 2023		Soil	S23-De0005777		X		
40	GX144/2.9-3.0	Nov 28, 2023		Soil	S23-De0005778		X		
41	GX145/2.9-3.0	Nov 29, 2023		Soil	S23-De0005779		X		
42	GX146/2.9-3.0	Nov 30, 2023		Soil	S23-De0005780		X		
43	GX147/1.4-1.5	Nov 30, 2023		Soil	S23-De0005781		X		
44	GX148/2.9-3.0	Dec 01, 2023		Soil	S23-De0005782		X		
45	GX149/1.4-1.5	Dec 01, 2023		Soil	S23-De0005783		X		
46	R1	Nov 23, 2023		Water	S23-De0005784		X		
47	R3	Nov 27, 2023		Water	S23-De0005785		X		
48	R4	Nov 28, 2023		Water	S23-De0005786		X		

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Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
49	R6	Nov 30, 2023		Water	S23-De0005787		X		
50	R7	Dec 01, 2023		Water	S23-De0005788	X			
51	DS75	Nov 22, 2023		Soil	S23-De0005891		X		
52	TS7B	Nov 22, 2023		Soil	S23-De0005892		X		
53	GX-149/2.9-3.0	Dec 01, 2023		Soil	S23-De0005893			X	X
54	GX143/1.4-1.5	Nov 28, 2023		Soil	S23-De0005894			X	X
55	GX143/2.9-3.0	Nov 28, 2023		Soil	S23-De0005895		X		
56	GX-144/0.4-0.5	Nov 29, 2023		Soil	S23-De0005896			X	X
57	GX-135/2.9-3.0	Nov 23, 2023		Soil	S23-De0005897		X		
58	GX137/1.0-1.1	Nov 22, 2023		Soil	S23-De0005898		X		
59	GX-136/1.3-1.4	Nov 22, 2023		Soil	S23-De0005899			X	X
60	GX-144/2.4-2.5	Nov 29, 2023		Soil	S23-De0005900			X	X
Test Counts						3	23	31	34

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	98			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	95			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	95			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	104			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	99			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	104			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	105			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	102			50-150	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	95			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	85			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	94			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	95			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	96			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	108			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	82			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	96			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	100			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	101			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	91			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	95			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	96			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	N23-De0000318	NCP	%	100			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	N23-De0000318	NCP	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	N23-De0000318	NCP	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	N23-De0000318	NCP	%	98			50-150	Pass	
Perfluorooctanoic acid (PFOA)	N23-De0000318	NCP	%	99			50-150	Pass	
Perfluorononanoic acid (PFNA)	N23-De0000318	NCP	%	89			50-150	Pass	
Perfluorodecanoic acid (PFDA)	N23-De0000318	NCP	%	91			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	N23-De0000318	NCP	%	89			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	N23-De0000318	NCP	%	91			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-De0001228	NCP	%	117			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	N23-De0000318	NCP	%	91			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	N23-De0000318	NCP	%	81			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N23-De0000318	NCP	%	80			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N23-De0000318	NCP	%	80			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	N23-De0000318	NCP	%	78			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	N23-De0000318	NCP	%	79			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	N23-De0000318	NCP	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	N23-De0000318	NCP	%	84			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	N23-De0000318	NCP	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	N23-De0000318	NCP	%	70			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	N23-De0000318	NCP	%	90			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	N23-De0000318	NCP	%	89			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N23-De0000318	NCP	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	N23-De0000318	NCP	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	N23-De0000318	NCP	%	86			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-De0005530	NCP	%	77			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	N23-De0000318	NCP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	N23-De0000318	NCP	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	N23-De0000318	NCP	%	88			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	N23-De0000318	NCP	%	97			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N23-De0000317	NCP	ug/L	0.02	0.02	10	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	N23-De0000317	NCP	ug/L	0.03	0.04	4.9	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	N23-De0000317	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	N23-De0000317	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) to amend the sampling date of S23-De0005737.

This report has been revised (V3) to amend the sampling date of S23-De0005766 from 22/11/2023 to 23/11/2023 as per client request.

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:

Asim Khan	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

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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ABN: 47 009 120 549

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+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Geo-Logix P/L
Contact name: David Gregory
Project name: RICHMOND
Project ID: 2301034
Turnaround time: 5 Day
Date/Time received Dec 4, 2023 3:17 PM
Eurofins reference 1050296

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 : 7.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

We not received samples "G-135/2.9-3.0, G-149/2.9-3.0 & R7 "- Analyzes cancel. We received extra sample logged on HOLD, sample 23-De0005891 until 23-De0005900. | Sample TS1 migrated to report #1050399. | Sample TS5b migrated to report #1050402

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to David Gregory - dgregory@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 4

Project Manager: David Gregory
Purchase Order No: PO#6145SB
Contact email: dgregory@geo-logix.com.au | jmaltman@geo-logix.com.au | sbolton@geo-logix.com.au
Quote Reference: 2301714GLXN
Project Name: Richmond
Send Invoice to: accounts@geo-logix.com.au
Project Number: 2301034
Date Submitted: 4/12/2023
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
GX135/0.4-0.5		23/11/23	✓						✓		
GX135/1.4-1.5			✓						✓		
GX135/2.9-3.0			✓							✓	
GX136/0.4-0.5		22/11/23	✓						✓		
~~GX136/1.4-1.5~~			✓						✓		
GX136/2.9-3.0			✓							✓	
GX137/0.4-0.5			✓						✓		
~~GX137/1.4-1.5~~			✓								
GX138/0.4-0.5			✓						✓		
GX138/1.4-1.5			✓						✓		
GX138/2.9-3.0			✓							✓	
GX139/0.4-0.5		24/11/23	✓						✓		
GX139/1.4-1.5			✓							✓	
GX139/2.9-3.0			✓						✓		
GX140/0.4-0.5			✓						✓		
GX140/1.4-1.5			✓						✓		
GX140/2.9-3.0			✓							✓	
GX141/0.4-0.5		27/11/23	✓						✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	^{1}Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals**(circle) As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr $^{6+}$, Cr $^{3+}$, Fe $^{2+}$, Fe $^{3+}$, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S. Bolton Date/Time: 4/12/23 Signature:
Received by: Elizabeth Date/Time: 4/12 3:17pm Signature:
7.1°C
1050296

Version: V1
Issued: June 2015
Review: January 2022

...SW 2102
...e 892 936
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F: (02) 9979 1222

Contact email: dgregory@geo-logix.com.au | jmaltman@geo-logix.com.au | sbolton@geo-logix.com.au

Project Name: Richmond

Project Number: 2301034 Date Submitted: 4/12/2023

Quote Reference: 2301714GLXN

Send Invoice to: accounts@geo-logix.com.au

TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	GX141/1.4-1.5	27/11/23	✓						✓		
	GX141/2.9-3.0		✓								
	GX142/0.4-0.5		✓						✓	✓	
	GX142/1.4-1.5		✓								
	GX142/2.0-2.1		✓						✓	✓	
	GX142/2.9-3.0	↓	✓								
	GX143/0.4-0.5	28/11/23	✓						✓	✓	
	GX143/1.4-1.5		✓						✓		
	GX143/2.9-3.0	↓	✓								
Sam	~~GX144/0.4-0.5~~	~~29/11/23~~	✓						✓	✓	
	~~GX144/1.4-1.5~~		✓								
	~~GX144/2.9-3.0~~		✓						✓	✓	
	GX145/0.4-0.5		✓								
	GX145/1.4-1.5		✓						✓	✓	
	GX145/2.9-3.0	↓	✓						✓		
	GX146/0.4-0.5	30/11/23	✓						EA	✓	
	GX146/1.4-1.5	↓	✓						✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

etals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S.Bolton Date/Time: 4/12/23 Signature: [signature] Received by: _____ Date/Time: _____ Signature: [signature]

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Warriewood, NSW 2102
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CHAIN OF CUSTODY

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au | jmaltman@geo-logix.com.au | sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034
Date Submitted: 4/12/2023
Purchase Order No: PO#6145SB
Quote Reference: 2301714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	~~GX146/14-15~~	30/11/23	✓						1		
	~~GX146/04-05~~		✓						1		
	GX146/29-30	30/11/23	✓							✓	
	GX147/04-05		✓						✓		
	GX147/14-15		✓							✓	
	GX147/29-30	✓	✓						✓		
	GX148/04-05	01/12/23	✓						✓		
	GX148/14-15		✓						✓		
	GX148/29-30		✓							✓	
	GX149/04-05		✓						✓		
	GX149/14-15		✓							✓	
	GX149/29-30	✓	✓						✓		
	R1	23/11/23		✓						✓	
	R2	24/11/23		✓					✓		
	R3	27/11/23		✓						✓	
	R4	28/11/23		✓						✓	
	R5	29/11/23		✓					✓		
	R6	30/11/23		✓						✓	
	~~FRB Blank~~	3/11/23		✓							
	Blank	12/11/23		✓							

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals**(circle) As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S.Bolton Date/Time: 4/12/23 Signature: [signature] Received by: _____ Date/Time: _____ Signature: [signature]

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au | jmaltman@geo-logix.com.au | sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034
Date Submitted: 4/12/2023
Purchase Order No: PO#6145SB
Quote Reference: 2301714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	R7	1/12/23		✓						✓	
	Blank	22/12		✓					✓		
	DS5b		✓						✓		
	G+137/2930	22/11/23	✓						✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S Bolton Date/Time: 4/12/23 Signature:
Received by: Date/Time: Signature:

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au | jmaltman@geo-logix.com.au | sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 4/12/2023

Page 1 of 1
Purchase Order No: PO#6149SB
Quote Reference: 2301714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

Please send to Eurofins Melbourne

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	TS1	30/11/23	✓					Please send to Eurofins Melbourne	✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: _____ Date/Time: _____ Signature: _____ Received by: Elizabeth Date/Time: 4/12 3:17pm Signature: _____ 7.1°C

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix Pty Ltd
Building Q2, Level 3
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Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Please send to Eurofins Melbourne

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au | jmaltman@geo-logix.com.au | sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 4/12/2023

Purchase Order No: PO#6147SB
Quote Reference: 2301714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	TS5b							Please send to Eurofins Melbourne	✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S.Bolton Date/Time: 4/12/23 Signature:

Received by: Elizabeth Date/Time: 4/12 3:17pm Signature:

7.1°C

Version: V1
Issued: June 2015
Review: January 2022

Re: Eurofins Sample Receipt Advice - Report 1050296 : Site RICHMOND (2301034)

Sarah Bolton <SBolton@geo-logix.com.au>

Tue 2023-12-05 8:57 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>;David Gregory <dgregory@geo-logix.com.au>
Cc:Jenna Maltman <jmaltman@geo-logix.com.au>

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Hi Larissa,

Can you please separate TS1 and TS5b into their own separate jobs? These are triplicate samples, have separate POs, and must be sent to Eurofins Melbourne.

Much appreciated.

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Monday, December 4, 2023 8:17 PM
To: David Gregory <dgregory@geo-logix.com.au>
Cc: Jenna Maltman <jmaltman@geo-logix.com.au>; Sarah Bolton <SBolton@geo-logix.com.au>
Subject: Eurofins Sample Receipt Advice - Report 1050296 : Site RICHMOND (2301034)

Dear Valued Client,
We not received samples "G-135/2.9-3.0, G-149/2.9-3.0 & R7 "- Analyzes cancel. We received extra sample logged on HOLD, sample 23-De0005891 until 23-De0005900.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

Kind regards

Re: Eurofins Sample Receipt Advice - Report 1050296 : Site RICHMOND (2301034)

Sarah Bolton <SBolton@geo-logix.com.au>

Tue 2023-12-05 9:12 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>;David Gregory <dgregory@geo-logix.com.au>
Cc:Jenna Maltman <jmaltman@geo-logix.com.au>;Asim Khan <AsimKhan@eurofins.com>

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Hi Larissa,

Further, are you able to:

- change the names of the samples to match those on the COC (e.g., GX135, not G-135).
- Run sample GX149/ as GX149/2.9-3.0.
- Can I please get a photo all additional samples, with their labels? I can't seem to make much sense of the summary COC. I think some of the writing on their labels has been misread.

Much appreciated.

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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From: Sarah Bolton <SBolton@geo-logix.com.au>
Sent: Tuesday, December 5, 2023 8:56 AM
To: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>; David Gregory <dgregory@geo-logix.com.au>
Cc: Jenna Maltman <jmaltman@geo-logix.com.au>
Subject: Re: Eurofins Sample Receipt Advice - Report 1050296 : Site RICHMOND (2301034)

Hi Larissa,

Can you please separate TS1 and TS5b into their own separate jobs? These are triplicate samples, have separate POs, and must be sent to Eurofins Melbourne.

Much appreciated.

Kind Regards,

Sarah Bolton | Project Scientist

Re: Eurofins Sample Receipt Advice - Report 1050296 : Site RICHMOND (2301034)

Sarah Bolton <SBolton@geo-logix.com.au>

Wed 2023-12-06 9:59 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>;David Gregory <dgregory@geo-logix.com.au>
Cc:Jenna Maltman <jmaltman@geo-logix.com.au>;Asim Khan <AsimKhan@eurofins.com>

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Hi Elizabeth,

Can you please update the following:

- Label sample SE23-De0005899 as GX136/1.3-1.4 not GX135/1.3-1.4 and please analyse for PFAS.
- GX137/1.0-1.1 was labelled as not received but I can see it in one of the photos (sample ID S23-De0005898).
- Sample labeled GX149/ is GX149/2.9-3.0 (S23-De0005893, I believe you have already done this, just making sure).
- Sample labeled GX143/0.4-0.5 with the date of the 29/11/2023 on the jar (S23-De-0005896) is sample GX144/0.4-0.5.
- Sample GX143/2.4-2.5 dated 29/11/2023 on the jar (S23-De0005900) is sample GX144/2.4-2.5.
- Can I confirm that the samples logged as GX143 have the date as the 28/11/2023 on the jars? If the date on the jars is the 29/11/2023, these are sample GX144. The jars dated 28/11/2023 are the correct GX143. Please confirm and amend as required. Happy for you to send photos of all jars labeled GX143 for me to confirm if you require.
- Please rename sample GX135/1.9-2.0 (S23-De005899 dated 23/11/2023) as GX135/2.9-3.0.

Please let me know if you have any questions.

Much appreciated.

Kind Regards,

Sarah Bolton | Project Scientist
NSW SafeWork LAA002031
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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From: #AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, December 5, 2023 9:31 AM
To: Sarah Bolton <SBolton@geo-logix.com.au>; David Gregory <dgregory@geo-logix.com.au>
Cc: Jenna Maltman <jmaltman@geo-logix.com.au>; Asim Khan <AsimKhan@eurofins.com>
Subject: Re: Eurofins Sample Receipt Advice - Report 1050296 : Site RICHMOND (2301034)

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 21 May 2024 11:59 AM
To: #AU25_Enviro_Sample_NSW
Cc: Asim Khan
Subject: 1050296-S sample date amendments

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Asim,

Could please get the following sample dates corrected for Report #1050296-S:

GX Reference	Eurofins Reference	Date
GX135/0.4-0.5	**S23-De0005737**	23/11/2023

Kind Regards,

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au



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Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 11 June 2024 2:54 PM
To: EnviroSampleNSW@eurofins.com
Cc: AsimKhan@eurofins.com
Subject: #1050296-S amendment

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Hi Asim,

Could please get the following sample dates corrected for Report #1050296-S:

GX Reference	Eurofins Reference	Date
DS5B	**S23-De0005766**	23/11/2023

Jenna Maltman | Auditor Assistant
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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Accreditation Number 1261
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Accredited for compliance with ISO/IEC 17025 – Testing
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Attention: **David Gregory**

Report **1050402-S-V2**
Project name RICHMOND
Project ID 2301034
Received Date Dec 04, 2023

Client Sample ID			**TS5B**
Sample Matrix			**Soil**
Eurofins Sample No.			**S23-De0005769**
Date Sampled			**Nov 23, 2023**
Test/Reference	LOR	Unit	
Sample Properties			
% Moisture	1	%	6.5
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	99
13C5-PFPeA (surr.)	1	%	93
13C5-PFHxA (surr.)	1	%	97
13C4-PFHpA (surr.)	1	%	93
13C8-PFOA (surr.)	1	%	101
13C5-PFNA (surr.)	1	%	113
13C6-PFDA (surr.)	1	%	91
13C2-PFUnDA (surr.)	1	%	119
13C2-PFDoDA (surr.)	1	%	127
13C2-PFTeDA (surr.)	1	%	112
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10

Client Sample ID			TS5B
Sample Matrix			Soil
Eurofins Sample No.			S23-De0005769
Date Sampled			Nov 23, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
13C8-FOSA (surr.)	1	%	96
D3-N-MeFOSA (surr.)	1	%	122
D5-N-EtFOSA (surr.)	1	%	135
D7-N-MeFOSE (surr.)	1	%	106
D9-N-EtFOSE (surr.)	1	%	126
D5-N-EtFOSAA (surr.)	1	%	91
D3-N-MeFOSAA (surr.)	1	%	101
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	130
18O2-PFHxS (surr.)	1	%	126
13C8-PFOS (surr.)	1	%	65
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	109
13C2-6:2 FTSA (surr.)	1	%	117
13C2-8:2 FTSA (surr.)	1	%	127
13C2-10:2 FTSA (surr.)	1	%	101
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Dec 04, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Dec 07, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Dec 04, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
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Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034

Order No.: PO 6147SB
Report #: 1050402
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 4, 2023 3:17 PM
Due: Dec 11, 2023
Priority: 5 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TS5B	Nov 23, 2023		Soil	S23-De0005769	X	X
Test Counts						1	1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	72			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	76			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	69			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	65			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	80			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	77			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	75			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	78			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	70			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	61			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	74			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	77			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	74			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	80			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	67			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	76			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	61			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	64			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	100			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	85			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	69			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	66			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	140			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	67			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	81			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	65			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	69			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	82			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-De0010893	NCP	%	82			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-De0010893	NCP	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-De0010893	NCP	%	80			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-De0010893	NCP	%	77			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-De0010893	NCP	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-De0010893	NCP	%	87			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-De0010893	NCP	%	85			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-De0010893	NCP	%	86			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-De0010893	NCP	%	84			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-De0010893	NCP	%	77			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-De0010893	NCP	%	90			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-De0010893	NCP	%	82			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-De0010893	NCP	%	83			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-De0010893	NCP	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-De0010893	NCP	%	67			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-De0010893	NCP	%	82			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-De0010893	NCP	%	78			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-De0010893	NCP	%	85			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-De0010893	NCP	%	87			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-De0010893	NCP	%	150			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-De0010893	NCP	%	91			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-De0010893	NCP	%	81			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-De0010893	NCP	%	74			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-De0009399	NCP	%	150			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-De0010893	NCP	%	83			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-De0010893	NCP	%	123			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-De0010893	NCP	%	80			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-De0010893	NCP	%	73			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-De0010893	NCP	%	74			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-De0010893	NCP	%	91			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B23-De0005497	NCP	%	8.8	8.8	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-De0010892	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-De0010892	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-De0010892	NCP	ug/kg	< 5	5.0	11	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-De0010892	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-De0010892	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

This report has been revised (V2) to amend the sampling date of S23-De0005769 from 22/11/2024 to 23/11/2024 as per client request.

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:

Asim Khan	Analytical Services Manager
Joseph Edouard	Senior Analyst-PFAS
Mary Makarios	Senior Analyst-Sample Properties



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

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Eurofins ProMicro Pty Ltd

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NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Geo-Logix P/L
Contact name: David Gregory
Project name: RICHMOND
Project ID: 2301034
Turnaround time: 5 Day
Date/Time received Dec 4, 2023 3:17 PM
Eurofins reference 1050402

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 : 7.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Sample migrated from report #1050296.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to David Gregory - dgregory@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Global Leader - Results you can trust

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Please send to Eurofins Melbourne

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au | jmaltman@geo-logix.com.au | sbolton@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 Date Submitted: 4/12/2023

Purchase Order No: PO#6147SB
Quote Reference: 2301714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	TS5b							Please send to Eurofins Melbourne	✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S.Bolton Date/Time: 4/12/23 Signature:

Received by: Elizabeth Date/Time: 4/12 3:17pm Signature:

7.1°C

Version: V1
Issued: June 2015
Review: January 2022

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 11 June 2024 2:56 PM
To: EnviroSampleNSW@eurofins.com
Cc: AsimKhan@eurofins.com
Subject: 1050402-S amendment

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

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Hi Asim,

Could please get the following sample dates corrected for Report #1050402-S:

GX Reference	Eurofins Reference	Date
TS5B	**S23-De0005769**	23/11/2023

Kind Regards,

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au

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NSW 2102

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Accreditation Number 1261
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Attention: **David Gregory**

Report **1054229-W**
Project name RICHMOND
Project ID 2301034B
Received Date Dec 14, 2023

Client Sample ID			**GW135**	**GW136**	**GW137**	**GW139**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-De0035865**	**S23-De0035866**	**S23-De0035867**	**S23-De0035868**
Date Sampled			**Dec 11, 2023**	**Dec 11, 2023**	**Dec 11, 2023**	**Dec 11, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.06	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.33	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	0.02	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	79	91	83	83
13C5-PFPeA (surr.)	1	%	91	93	92	86
13C5-PFHxA (surr.)	1	%	98	104	104	83
13C4-PFHpA (surr.)	1	%	96	104	102	80
13C8-PFOA (surr.)	1	%	97	91	100	73
13C5-PFNA (surr.)	1	%	94	90	90	71
13C6-PFDA (surr.)	1	%	90	87	90	52
13C2-PFUnDA (surr.)	1	%	88	84	89	43
13C2-PFDoDA (surr.)	1	%	90	75	77	32
13C2-PFTeDA (surr.)	1	%	59	39	62	11
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	80	97	90	88
D3-N-MeFOSA (surr.)	1	%	27	48	64	81

Client Sample ID			GW135	GW136	GW137	GW139
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035865	S23-De0035866	S23-De0035867	S23-De0035868
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 11, 2023	Dec 11, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	32	45	59	85
D7-N-MeFOSE (surr.)	1	%	53	65	70	64
D9-N-EtFOSE (surr.)	1	%	52	58	65	62
D5-N-EtFOSAA (surr.)	1	%	92	75	79	50
D3-N-MeFOSAA (surr.)	1	%	86	80	81	56
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	0.45	0.03	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.18	0.02	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	0.40	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.16	0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	0.02	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	104	109	114	89
18O2-PFHxS (surr.)	1	%	112	103	104	81
13C8-PFOS (surr.)	1	%	111	108	102	59
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	0.27	0.08	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	112	139	149	108
13C2-6:2 FTSA (surr.)	1	%	90	88	96	69
13C2-8:2 FTSA (surr.)	1	%	153	125	135	127
13C2-10:2 FTSA (surr.)	1	%	84	67	73	46
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.16	0.03	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.02	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.16	0.03	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	1.29	0.14	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	1.87	0.16	< 0.1

Client Sample ID			GW140	GW141	GW143	GW144
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035869	S23-De0035870	S23-De0035871	S23-De0035872
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 11, 2023	Dec 11, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW140	GW141	GW143	GW144
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035869	S23-De0035870	S23-De0035871	S23-De0035872
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 11, 2023	Dec 11, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	75	100	82	78
13C5-PFPeA (surr.)	1	%	87	108	100	93
13C5-PFHxA (surr.)	1	%	92	107	108	95
13C4-PFHpA (surr.)	1	%	90	101	122	83
13C8-PFOA (surr.)	1	%	80	96	134	81
13C5-PFNA (surr.)	1	%	78	88	171	74
13C6-PFDA (surr.)	1	%	75	69	177	57
13C2-PFUnDA (surr.)	1	%	70	58	INT	43
13C2-PFDoDA (surr.)	1	%	61	39	INT	31
13C2-PFTeDA (surr.)	1	%	29	12	INT	13
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	97	110	95	85
D3-N-MeFOSA (surr.)	1	%	92	70	51	34
D5-N-EtFOSA (surr.)	1	%	88	62	68	32
D7-N-MeFOSE (surr.)	1	%	73	76	57	54
D9-N-EtFOSE (surr.)	1	%	65	71	63	46
D5-N-EtFOSAA (surr.)	1	%	73	60	INT	45
D3-N-MeFOSAA (surr.)	1	%	77	69	INT	51
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.04	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.03	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.02	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.07	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	98	118	122	97
18O2-PFHxS (surr.)	1	%	99	110	155	84
13C8-PFOS (surr.)	1	%	88	83	INT	62

Client Sample ID			GW140	GW141	GW143	GW144
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035869	S23-De0035870	S23-De0035871	S23-De0035872
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 11, 2023	Dec 11, 2023
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	109	141	142	124
13C2-6:2 FTSA (surr.)	1	%	69	100	122	83
13C2-8:2 FTSA (surr.)	1	%	151	147	INT	106
13C2-10:2 FTSA (surr.)	1	%	69	54	INT	51
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.07	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.07	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.11	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	0.16	< 0.1	< 0.1	< 0.1

Client Sample ID			GW145	GW146	GW147	GW148
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035873	S23-De0035874	S23-De0035875	S23-De0035876
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 12, 2023	Dec 12, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	78	80	80	81
13C5-PFPeA (surr.)	1	%	87	91	92	90
13C5-PFHxA (surr.)	1	%	91	93	96	95
13C4-PFHpA (surr.)	1	%	83	94	92	94
13C8-PFOA (surr.)	1	%	77	86	92	83
13C5-PFNA (surr.)	1	%	67	76	82	72
13C6-PFDA (surr.)	1	%	56	66	73	65
13C2-PFUnDA (surr.)	1	%	43	53	67	48
13C2-PFDoDA (surr.)	1	%	30	43	54	28
13C2-PFTeDA (surr.)	1	%	13	24	26	INT

Client Sample ID			GW145	GW146	GW147	GW148
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035873	S23-De0035874	S23-De0035875	S23-De0035876
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 12, 2023	Dec 12, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	91	92	99	73
D3-N-MeFOSA (surr.)	1	%	92	61	68	17
D5-N-EtFOSA (surr.)	1	%	86	56	68	18
D7-N-MeFOSE (surr.)	1	%	70	64	64	36
D9-N-EtFOSE (surr.)	1	%	59	58	59	35
D5-N-EtFOSAA (surr.)	1	%	47	52	64	44
D3-N-MeFOSAA (surr.)	1	%	53	61	64	53
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	88	99	102	97
18O2-PFHxS (surr.)	1	%	80	93	105	93
13C8-PFOS (surr.)	1	%	56	73	90	72
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	105	123	119	124
13C2-6:2 FTSA (surr.)	1	%	74	84	78	77
13C2-8:2 FTSA (surr.)	1	%	103	126	116	90
13C2-10:2 FTSA (surr.)	1	%	45	58	52	48
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			DS2B	FRB1	R1	R2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035877	S23-De0035878	S23-De0035879	S23-De0035880
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 11, 2023	Dec 12, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	80	79	82	77
13C5-PFPeA (surr.)	1	%	93	86	89	84
13C5-PFHxA (surr.)	1	%	95	85	97	91
13C4-PFHpA (surr.)	1	%	82	77	94	78
13C8-PFOA (surr.)	1	%	79	62	89	73
13C5-PFNA (surr.)	1	%	71	51	77	66
13C6-PFDA (surr.)	1	%	56	37	61	58
13C2-PFUnDA (surr.)	1	%	44	25	55	49
13C2-PFDoDA (surr.)	1	%	29	15	46	41
13C2-PFTeDA (surr.)	1	%	12	INT	31	30
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	89	100	96	97
D3-N-MeFOSA (surr.)	1	%	80	67	38	48
D5-N-EtFOSA (surr.)	1	%	74	67	34	48
D7-N-MeFOSE (surr.)	1	%	67	70	66	70
D9-N-EtFOSE (surr.)	1	%	63	64	55	66
D5-N-EtFOSAA (surr.)	1	%	53	34	53	49
D3-N-MeFOSAA (surr.)	1	%	51	39	53	53
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			DS2B	FRB1	R1	R2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035877	S23-De0035878	S23-De0035879	S23-De0035880
Date Sampled			Dec 11, 2023	Dec 11, 2023	Dec 11, 2023	Dec 12, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	93	85	97	87
18O2-PFHxS (surr.)	1	%	81	62	87	77
13C8-PFOS (surr.)	1	%	60	36	73	60
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	107	127	114	103
13C2-6:2 FTSA (surr.)	1	%	90	74	88	78
13C2-8:2 FTSA (surr.)	1	%	114	102	128	102
13C2-10:2 FTSA (surr.)	1	%	46	23	47	47
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Dec 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Dec 17, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Dec 15, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Dec 15, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Dec 15, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Site# 2370

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Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: 6166JU
Report #: 1054229
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 14, 2023 5:15 PM
Due: Jan 8, 2024
Priority: 15 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	GW135	Dec 11, 2023		Water	S23-De0035865	X
2	GW136	Dec 11, 2023		Water	S23-De0035866	X
3	GW137	Dec 11, 2023		Water	S23-De0035867	X
4	GW139	Dec 11, 2023		Water	S23-De0035868	X
5	GW140	Dec 11, 2023		Water	S23-De0035869	X
6	GW141	Dec 11, 2023		Water	S23-De0035870	X
7	GW143	Dec 11, 2023		Water	S23-De0035871	X
8	GW144	Dec 11, 2023		Water	S23-De0035872	X
9	GW145	Dec 11, 2023		Water	S23-De0035873	X
10	GW146	Dec 11, 2023		Water	S23-De0035874	X
11	GW147	Dec 12, 2023		Water	S23-De0035875	X
12	GW148	Dec 12, 2023		Water	S23-De0035876	X

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: 6166JU
Report #: 1054229
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 14, 2023 5:15 PM
Due: Jan 8, 2024
Priority: 15 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						X
13	DS2B	Dec 11, 2023		Water	S23-De0035877	X
14	FRB1	Dec 11, 2023		Water	S23-De0035878	X
15	R1	Dec 11, 2023		Water	S23-De0035879	X
16	R2	Dec 12, 2023		Water	S23-De0035880	X
Test Counts						16

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
PFASs Summations							
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	98			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	99			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	95			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	109			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	113			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	106			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	117			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	128			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	117			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	90			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	110			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	104			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	106			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	97			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	120			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	97			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	115			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	96			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	92			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	102			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	102			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	101			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	82			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	95			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	93			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-De0035867	CP	%	98			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-De0035867	CP	%	105			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-De0035867	CP	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-De0035867	CP	%	111			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-De0035867	CP	%	109			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-De0035867	CP	%	111			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-De0035867	CP	%	111			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-De0035867	CP	%	102			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-De0035867	CP	%	110			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-De0035867	CP	%	103			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-De0035867	CP	%	103			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-De0035867	CP	%	117			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-De0035867	CP	%	116			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-De0035867	CP	%	98			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-De0035867	CP	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-De0035867	CP	%	109			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-De0035867	CP	%	111			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-De0035867	CP	%	89			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-De0035867	CP	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-De0035867	CP	%	84			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-De0035867	CP	%	82			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-De0035867	CP	%	99			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-De0035867	CP	%	98			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-De0035867	CP	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-De0035867	CP	%	85			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-De0035867	CP	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-De0035867	CP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-De0035867	CP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-De0035867	CP	%	107			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-De0021655	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-De0028291	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-De0028291	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Asim Khan Analytical Services Manager



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

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	David Gregory
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	15 Day
Date/Time received	Dec 14, 2023 5:15 PM
Eurofins reference	1054229

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 : 10.4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to David Gregory - dgregory@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au; sbolton@geo-logix.com.au; jmaitman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034b
Date Submitted: 14/12/2023

Purchase Order No: PO#61665U
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	GW135	12/12/23		✓					✓		
	GW136	↓		✓					✓		
	GW137			✓					✓		
	GW139			✓					✓		
	GW140			✓					✓		
	GW141			✓					✓		
	GW143			✓					✓		
	GW144			✓					✓		
	GW145			✓					✓		
	GW146	↓		✓					✓		
	GW147	12/12/23		✓					✓		
	GW148	↓		✓					✓		
	~~DW6~~			-					-		
	~~DW7~~			-					-		
	DW8			-					-		
	DS2b	11/12/23		✓					✓		
	FRB1	11		✓					✓		
	R1	11		✓					✓		
	R2	12/12/23		✓					✓		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Chain of Custody

Relinquished by: S. Bolton Date/Time: 14/12/23 Signature: SB

Received by: Kayson Fonseca Date/Time: 14/12 5:15pm Signature:

10 54 229

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **David Gregory**

Report **1054235-W**
Project name RICHMOND
Project ID 2301034B
Received Date Dec 14, 2023

Client Sample ID			**TS2B**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-De0035921**
Date Sampled			**Dec 11, 2023**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	139
13C5-PFPeA (surr.)	1	%	97
13C5-PFHxA (surr.)	1	%	81
13C4-PFHpA (surr.)	1	%	72
13C8-PFOA (surr.)	1	%	124
13C5-PFNA (surr.)	1	%	112
13C6-PFDA (surr.)	1	%	83
13C2-PFUnDA (surr.)	1	%	78
13C2-PFDoDA (surr.)	1	%	96
13C2-PFTeDA (surr.)	1	%	96
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	79
D3-N-MeFOSA (surr.)	1	%	53

Client Sample ID			TS2B
Sample Matrix			Water
Eurofins Sample No.			S23-De0035921
Date Sampled			Dec 11, 2023
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	46
D7-N-MeFOSE (surr.)	1	%	69
D9-N-EtFOSE (surr.)	1	%	24
D5-N-EtFOSAA (surr.)	1	%	91
D3-N-MeFOSAA (surr.)	1	%	102
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	101
18O2-PFHxS (surr.)	1	%	122
13C8-PFOS (surr.)	1	%	104
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	84
13C2-6:2 FTSA (surr.)	1	%	95
13C2-8:2 FTSA (surr.)	1	%	81
13C2-10:2 FTSA (surr.)	1	%	98
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Dec 18, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Dec 18, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Dec 18, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Dec 18, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Dec 15, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: 6167JU
Report #: 1054235
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 14, 2023 5:15 PM
Due: Jan 8, 2024
Priority: 15 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	TS2B	Dec 11, 2023		Water	S23-De0035921	X
Test Counts						1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	88			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	85			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	86			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	88			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	87			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	86			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	82			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	93			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	91			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	55			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	57			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	108			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	83			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	127			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	103			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	92			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	89			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	72			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	72			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	80			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	75			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	58			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	82			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	82			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	88			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M23-De0039177	NCP	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M23-De0039177	NCP	%	94			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M23-De0039177	NCP	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-De0039177	NCP	%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M23-De0039177	NCP	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	M23-De0039177	NCP	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M23-De0039177	NCP	%	94			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-De0039177	NCP	%	104			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-De0039177	NCP	%	93			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-De0039177	NCP	%	52			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-De0039177	NCP	%	65			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M23-De0039177	NCP	%	95			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-De0039177	NCP	%	105			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-De0039177	NCP	%	101			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-De0039177	NCP	%	69			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-De0039177	NCP	%	96			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-De0039177	NCP	%	90			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-De0039177	NCP	%	107			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M23-De0039177	NCP	%	81			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-De0039177	NCP	%	84			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-De0039177	NCP	%	101			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-De0039177	NCP	%	95			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-De0039177	NCP	%	85			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-De0039177	NCP	%	90			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-De0039177	NCP	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-De0039177	NCP	%	62			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-De0039177	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-De0039177	NCP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-De0039177	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-De0039177	NCP	%	90			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M23-De0039176	NCP	ug/L	0.07	0.07	4.0	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M23-De0039176	NCP	ug/L	0.05	0.05	2.7	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M23-De0039176	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M23-De0039176	NCP	ug/L	0.01	0.01	6.6	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M23-De0039176	NCP	ug/L	0.02	0.02	9.5	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M23-De0039176	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M23-De0039176	NCP	ug/L	0.28	0.30	6.0	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M23-De0039176	NCP	ug/L	0.08	0.07	17	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M23-De0039176	NCP	ug/L	0.02	0.01	46	30%	Fail	Q15

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).
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Carroll Lee	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
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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NZBN: 9429046024954

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	David Gregory
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	15 Day
Date/Time received	Dec 14, 2023 5:15 PM
Eurofins reference	1054235

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 : 10.4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to David Gregory - dgregory@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au; sbolton@geo-logix.com.au; jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034 b
Date Submitted: 14/12/2023

Purchase Order No: PO#6167JM
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

Triplicate Sample, Separate job, Send to Eurofins Melbourne

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	TS2b	11/12/23		✓				Please send to Eurofins Melbourne	✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S. Bolton Date/Time: 14/12/23 Signature:

Received by: Date/Time: Signature:

1054235

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **David Gregory**

Report **1055258-S**
Project name RICHMOND
Project ID 2301034B
Received Date Dec 18, 2023

Client Sample ID			**GX150/0.4-0.5**	**GX150/1.4-1.5**	**GX151/0.4-0.5**	**GX151/1.4-1.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S23-De0044007**	**S23-De0044008**	**S23-De0044009**	**S23-De0044010**
Date Sampled			**Dec 07, 2023**	**Dec 07, 2023**	**Dec 07, 2023**	**Dec 07, 2023**
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	5.2	13	2.1	8.7
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	119	112	118	120
13C5-PFPeA (surr.)	1	%	109	108	107	107
13C5-PFHxA (surr.)	1	%	100	99	110	101
13C4-PFHpA (surr.)	1	%	110	107	109	104
13C8-PFOA (surr.)	1	%	96	95	94	100
13C5-PFNA (surr.)	1	%	107	92	92	99
13C6-PFDA (surr.)	1	%	108	107	95	110
13C2-PFUnDA (surr.)	1	%	123	118	108	129
13C2-PFDoDA (surr.)	1	%	112	96	112	102
13C2-PFTeDA (surr.)	1	%	90	83	83	90
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			GX150/0.4-0.5	GX150/1.4-1.5	GX151/0.4-0.5	GX151/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-De0044007	S23-De0044008	S23-De0044009	S23-De0044010
Date Sampled			Dec 07, 2023	Dec 07, 2023	Dec 07, 2023	Dec 07, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	106	102	114	106
D3-N-MeFOSA (surr.)	1	%	128	120	124	113
D5-N-EtFOSA (surr.)	1	%	147	134	148	141
D7-N-MeFOSE (surr.)	1	%	111	94	111	96
D9-N-EtFOSE (surr.)	1	%	97	105	93	105
D5-N-EtFOSAA (surr.)	1	%	122	98	86	116
D3-N-MeFOSAA (surr.)	1	%	103	96	99	110
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	103	100	111	103
18O2-PFHxS (surr.)	1	%	106	100	92	98
13C8-PFOS (surr.)	1	%	116	106	103	111
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	113	112	123	105
13C2-6:2 FTSA (surr.)	1	%	108	109	111	96
13C2-8:2 FTSA (surr.)	1	%	87	77	82	113
13C2-10:2 FTSA (surr.)	1	%	127	109	103	112
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX152/0.4-0.5	GX152/1.4-1.5
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-De0044011	S23-De0044012
Date Sampled			Dec 15, 2023	Dec 15, 2023
Test/Reference	LOR	Unit		
Sample Properties				
% Moisture	1	%	5.5	13
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	118	117
13C5-PFPeA (surr.)	1	%	103	105
13C5-PFHxA (surr.)	1	%	107	115
13C4-PFHpA (surr.)	1	%	109	99
13C8-PFOA (surr.)	1	%	89	89
13C5-PFNA (surr.)	1	%	105	98
13C6-PFDA (surr.)	1	%	111	100
13C2-PFUnDA (surr.)	1	%	106	108
13C2-PFDoDA (surr.)	1	%	108	107
13C2-PFTeDA (surr.)	1	%	89	87
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10
13C8-FOSA (surr.)	1	%	115	108
D3-N-MeFOSA (surr.)	1	%	136	127
D5-N-EtFOSA (surr.)	1	%	135	141
D7-N-MeFOSE (surr.)	1	%	101	94
D9-N-EtFOSE (surr.)	1	%	102	99
D5-N-EtFOSAA (surr.)	1	%	101	104
D3-N-MeFOSAA (surr.)	1	%	98	92
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5

Client Sample ID			GX152/0.4-0.5	GX152/1.4-1.5
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-De0044011	S23-De0044012
Date Sampled			Dec 15, 2023	Dec 15, 2023
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	110	100
18O2-PFHxS (surr.)	1	%	103	91
13C8-PFOS (surr.)	1	%	99	107
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	104	101
13C2-6:2 FTSA (surr.)	1	%	72	86
13C2-8:2 FTSA (surr.)	1	%	79	90
13C2-10:2 FTSA (surr.)	1	%	127	96
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Dec 19, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Dec 22, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Dec 22, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Dec 22, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Dec 22, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Dec 19, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

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Eurofins Environment Testing Australia Pty Ltd
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
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NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: 6169JU
Report #: 1055258
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 18, 2023 12:00 AM
Due: Jan 4, 2024
Priority: 10 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX150/0.4-0.5	Dec 07, 2023		Soil	S23-De0044007		X	X
2	GX150/1.4-1.5	Dec 07, 2023		Soil	S23-De0044008		X	X
3	GX151/0.4-0.5	Dec 07, 2023		Soil	S23-De0044009		X	X
4	GX151/1.4-1.5	Dec 07, 2023		Soil	S23-De0044010		X	X
5	GX152/0.4-0.5	Dec 15, 2023		Soil	S23-De0044011		X	X
6	GX152/1.4-1.5	Dec 15, 2023		Soil	S23-De0044012		X	X
7	GX150/2.9-3.0	Dec 07, 2023		Soil	S23-De0044013	X		
8	GX151/2.9-3.0	Dec 07, 2023		Soil	S23-De0044014	X		
9	GX152/2.9-3.0	Dec 15, 2023		Soil	S23-De0044015	X		
Test Counts						3	6	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
PFASs Summations							
Sum of US EPA PFAS (PFOS + PFOA)*	ug/kg	-			5	N/A	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	103			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	105			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	107			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	96			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	104			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	123			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	116			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	122			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	132			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	121			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	91			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	102			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	113			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	109			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	119			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	120			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	105			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	83			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	101			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	115			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	107			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	59			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	140			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-De0051056	NCP	%	106			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-De0051056	NCP	%	113			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-De0051056	NCP	%	96			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-De0051056	NCP	%	106			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-De0051056	NCP	%	104			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-De0051056	NCP	%	102			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-De0051056	NCP	%	116			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-De0051056	NCP	%	93			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-De0051056	NCP	%	88			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-De0051056	NCP	%	140			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-De0051056	NCP	%	122			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-De0051056	NCP	%	98			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-De0051056	NCP	%	101			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-De0051056	NCP	%	105			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-De0051056	NCP	%	118			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-De0051056	NCP	%	110			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-De0051056	NCP	%	85			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-De0051056	NCP	%	115			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-De0051056	NCP	%	98			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-De0051056	NCP	%	77			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-De0051056	NCP	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-De0051056	NCP	%	98			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-De0051056	NCP	%	106			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-De0051056	NCP	%	87			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-De0051056	NCP	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-De0051056	NCP	%	87			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-De0051056	NCP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-De0051056	NCP	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-De0051056	NCP	%	80			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-De0051056	NCP	%	109			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-De0044010	CP	%	8.7	10	17	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-De0044010	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-De0044010	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-De0044010	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-De0044010	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan Analytical Services Manager



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

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

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Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Asb)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	David Gregory
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	10 Day
Date/Time received	Dec 18, 2023 12:00 AM
Eurofins reference	1055258

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 : 6.6 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to David Gregory - dgregory@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1
Purchase Order No: PO#6169 JM

Project Manager: David Gregory
Contact email: dgregory@geo-logix.com.au; sbolton@geo-logix.com.au; jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034b
Date Submitted: ~~14/12/2023~~ 18/12/23

Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	GX150/0.4-0.5	7/12/23	✓						✓		
	GX150/1.4-1.5		✓						✓		
	GX150/2.9-3.0		✓							✓	
	GX151/0.4-0.5		✓						✓		
	GX151/1.4-1.5		✓						✓		
	GX151/2.9-3.0		✓							✓	
	GX152/0.4-0.5	15/12/23	✓						✓		
	GX152/1.4-1.5		✓						✓		
	GX152/2.9-3.0		✓							✓	

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S Bolton Date/Time: 18/12/23 Signature:
Received by: Blake Gutt Date/Time: 18/12/2 Signature: Dikshant

1055258

T = 6.6° C

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1063340-W**
Project name RICHMOND
Project ID 2301034B
Received Date Jan 29, 2024

Client Sample ID			**GW150**	**GW152**	**GW156**	**GW157**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S24-Ja0046254**	**S24-Ja0046255**	**S24-Ja0046256**	**S24-Ja0046257**
Date Sampled			**Jan 23, 2024**	**Jan 23, 2024**	**Jan 23, 2024**	**Jan 23, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.03	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.07	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	107	115	113	108
13C5-PFPeA (surr.)	1	%	114	127	125	113
13C5-PFHxA (surr.)	1	%	113	130	117	113
13C4-PFHpA (surr.)	1	%	109	129	106	113
13C8-PFOA (surr.)	1	%	121	120	101	104
13C5-PFNA (surr.)	1	%	103	108	90	82
13C6-PFDA (surr.)	1	%	103	107	79	93
13C2-PFUnDA (surr.)	1	%	82	92	78	75
13C2-PFDoDA (surr.)	1	%	67	65	56	48
13C2-PFTeDA (surr.)	1	%	32	21	20	INT
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	89	93	75	76
D3-N-MeFOSA (surr.)	1	%	65	50	43	40
D5-N-EtFOSA (surr.)	1	%	57	38	30	26

Client Sample ID			GW150	GW152	GW156	GW157
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ja0046254	S24-Ja0046255	S24-Ja0046256	S24-Ja0046257
Date Sampled			Jan 23, 2024	Jan 23, 2024	Jan 23, 2024	Jan 23, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D7-N-MeFOSE (surr.)	1	%	65	57	48	45
D9-N-EtFOSE (surr.)	1	%	56	43	41	35
D5-N-EtFOSAA (surr.)	1	%	81	98	83	77
D3-N-MeFOSAA (surr.)	1	%	102	99	79	94
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	0.09	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.04	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.08	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.73	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.02	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.03	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	109	120	108	110
18O2-PFHxS (surr.)	1	%	104	109	106	112
13C8-PFOS (surr.)	1	%	90	109	92	97
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	113	141	142	119
13C2-6:2 FTSA (surr.)	1	%	115	108	100	117
13C2-8:2 FTSA (surr.)	1	%	105	126	79	95
13C2-10:2 FTSA (surr.)	1	%	85	71	65	61
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	0.76	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.05	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.78	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	0.97	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	1.11	< 0.1

Client Sample ID			GW159	GW160	DW3B	R3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ja0046258	S24-Ja0046259	S24-Ja0046260	S24-Ja0046261
Date Sampled			Jan 23, 2024	Jan 22, 2024	Jan 23, 2024	Jan 23, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW159	GW160	DW3B	R3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ja0046258	S24-Ja0046259	S24-Ja0046260	S24-Ja0046261
Date Sampled			Jan 23, 2024	Jan 22, 2024	Jan 23, 2024	Jan 23, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	116	113	108	102
13C5-PFPeA (surr.)	1	%	118	118	114	111
13C5-PFHxA (surr.)	1	%	118	122	115	111
13C4-PFHpA (surr.)	1	%	118	121	111	103
13C8-PFOA (surr.)	1	%	101	106	107	104
13C5-PFNA (surr.)	1	%	104	111	103	99
13C6-PFDA (surr.)	1	%	91	89	87	88
13C2-PFUnDA (surr.)	1	%	78	78	77	87
13C2-PFDoDA (surr.)	1	%	62	61	76	78
13C2-PFTeDA (surr.)	1	%	31	15	42	49
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	77	77	92	94
D3-N-MeFOSA (surr.)	1	%	42	49	74	85
D5-N-EtFOSA (surr.)	1	%	29	36	61	84
D7-N-MeFOSE (surr.)	1	%	51	55	72	84
D9-N-EtFOSE (surr.)	1	%	39	40	69	75
D5-N-EtFOSAA (surr.)	1	%	96	79	93	96
D3-N-MeFOSAA (surr.)	1	%	93	90	92	93
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	115	115	111	104
18O2-PFHxS (surr.)	1	%	110	111	103	95
13C8-PFOS (surr.)	1	%	105	104	97	87

Client Sample ID			GW159	GW160	DW3B	R3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ja0046258	S24-Ja0046259	S24-Ja0046260	S24-Ja0046261
Date Sampled			Jan 23, 2024	Jan 22, 2024	Jan 23, 2024	Jan 23, 2024
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	126	155	146	103
13C2-6:2 FTSA (surr.)	1	%	98	106	99	102
13C2-8:2 FTSA (surr.)	1	%	102	101	100	101
13C2-10:2 FTSA (surr.)	1	%	58	64	79	88
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			BLANK2	GW155	GW138	GW153
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ja0046262	S24-Ja0046263	S24-Ja0046264	S24-Ja0046265
Date Sampled			Jan 22, 2024	Jan 22, 2024	Jan 22, 2024	Jan 22, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	115	98	98	114
13C5-PFPeA (surr.)	1	%	122	104	108	122
13C5-PFHxA (surr.)	1	%	122	99	108	116
13C4-PFHpA (surr.)	1	%	120	106	96	121
13C8-PFOA (surr.)	1	%	112	96	96	99
13C5-PFNA (surr.)	1	%	103	91	101	102
13C6-PFDA (surr.)	1	%	90	82	91	93
13C2-PFUnDA (surr.)	1	%	76	81	84	83
13C2-PFDoDA (surr.)	1	%	59	75	81	67
13C2-PFTeDA (surr.)	1	%	35	59	65	24

Client Sample ID			BLANK2	GW155	GW138	GW153
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ja0046262	S24-Ja0046263	S24-Ja0046264	S24-Ja0046265
Date Sampled			Jan 22, 2024	Jan 22, 2024	Jan 22, 2024	Jan 22, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	86	94	93	92
D3-N-MeFOSA (surr.)	1	%	70	73	78	63
D5-N-EtFOSA (surr.)	1	%	55	71	73	50
D7-N-MeFOSE (surr.)	1	%	73	69	79	66
D9-N-EtFOSE (surr.)	1	%	61	69	82	58
D5-N-EtFOSAA (surr.)	1	%	75	81	92	79
D3-N-MeFOSAA (surr.)	1	%	94	88	92	88
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	115	109	99	112
18O2-PFHxS (surr.)	1	%	113	104	97	105
13C8-PFOS (surr.)	1	%	95	88	101	96
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	128	104	108	128
13C2-6:2 FTSA (surr.)	1	%	111	108	95	96
13C2-8:2 FTSA (surr.)	1	%	100	101	107	98
13C2-10:2 FTSA (surr.)	1	%	70	78	90	93
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Jan 31, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Jan 31, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Jan 29, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Jan 29, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Jan 29, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6211
Report #: 1063340
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:35 PM
Due: Feb 2, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	GW150	Jan 23, 2024		Water	S24-Ja0046254	X
2	GW152	Jan 23, 2024		Water	S24-Ja0046255	X
3	GW156	Jan 23, 2024		Water	S24-Ja0046256	X
4	GW157	Jan 23, 2024		Water	S24-Ja0046257	X
5	GW159	Jan 23, 2024		Water	S24-Ja0046258	X
6	GW160	Jan 22, 2024		Water	S24-Ja0046259	X
7	DW3B	Jan 23, 2024		Water	S24-Ja0046260	X
8	R3	Jan 23, 2024		Water	S24-Ja0046261	X
9	BLANK2	Jan 22, 2024		Water	S24-Ja0046262	X
10	GW155	Jan 22, 2024		Water	S24-Ja0046263	X
11	GW138	Jan 22, 2024		Water	S24-Ja0046264	X
12	GW153	Jan 22, 2024		Water	S24-Ja0046265	X
Test Counts						12

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	95			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	108			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	102			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	84			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	100			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	95			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	99			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	101			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	90			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	105			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	86			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	98			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	111			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	97			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
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ja0046255	CP	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046255	CP	%	98			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046255	CP	%	87			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046255	CP	%	89			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046255	CP	%	107			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046255	CP	%	92			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046255	CP	%	96			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046255	CP	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046255	CP	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046255	CP	%	117			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046255	CP	%	91			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046255	CP	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046255	CP	%	89			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046255	CP	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046255	CP	%	88			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046255	CP	%	103			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046255	CP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046255	CP	%	95			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046255	CP	%	85			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046255	CP	%	89			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046255	CP	%	84			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046255	CP	%	105			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046255	CP	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046255	CP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046255	CP	%	65			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046255	CP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046255	CP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046255	CP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046255	CP	%	89			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046254	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046254	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046265	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046265	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan Analytical Services Manager



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	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	5 Day
Date/Time received	Jan 29, 2024 5:35 PM
Eurofins reference	1063340

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 : 12.4 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

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Project Manager: Jenna Maltman
Purchase Order No: PO6211
Contact email: jmaltman@geo-logix.com.au
Quote Reference:
Project Name: Richmond
Send Invoice to: accounts@geo-logix.com.au
Project Number: 2301034b
Date Submitted: 25/01/2024
TAT required: Std.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments
	GW150	23/1/24		x				
	GW152	23/1/24		x				
	GW156	23/1/24		x				
	GW157	23/1/24		x				
	GW159	23/1/24		x				
	GW160	22/1/24		x				
	DW3b	23/1/24		x				
	R3	23/1/24		x				
	Blank2	22/1/24		x				
	GW155	22/1/24		X				
	GW138	22/1/24		X				
	GW153	22/1/24		X				

Lab ID	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
GW150																				x			
GW152																				X			
GW156																				X			
GW157																				X			
GW159																				X			
GW160																				X			
DW3b																				X			
R3																				X			
Blank2																				X			
GW155																				X			
GW138																				X			
GW153																				X			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	$Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3$
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	$TDS/SO_4/CH_4$/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature:
Received by: Brendan Carolly Date/Time: 25/1/24 5:37 Signature:

12.9

1063340

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1063341-W**
Project name RICHMOND
Project ID 2301034B
Received Date Jan 29, 2024

Client Sample ID			**TW3B**
Sample Matrix			**Water**
Eurofins Sample No.			**S24-Ja0046268**
Date Sampled			**Jan 23, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	80
13C5-PFPeA (surr.)	1	%	136
13C5-PFHxA (surr.)	1	%	113
13C4-PFHpA (surr.)	1	%	113
13C8-PFOA (surr.)	1	%	108
13C5-PFNA (surr.)	1	%	111
13C6-PFDA (surr.)	1	%	87
13C2-PFUnDA (surr.)	1	%	63
13C2-PFDoDA (surr.)	1	%	35
13C2-PFTeDA (surr.)	1	%	32
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	91
D3-N-MeFOSA (surr.)	1	%	43
D5-N-EtFOSA (surr.)	1	%	42

Client Sample ID			TW3B
Sample Matrix			Water
Eurofins Sample No.			S24-Ja0046268
Date Sampled			Jan 23, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D7-N-MeFOSE (surr.)	1	%	45
D9-N-EtFOSE (surr.)	1	%	37
D5-N-EtFOSAA (surr.)	1	%	52
D3-N-MeFOSAA (surr.)	1	%	64
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	147
18O2-PFHxS (surr.)	1	%	103
13C8-PFOS (surr.)	1	%	85
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	145
13C2-6:2 FTSA (surr.)	1	%	129
13C2-8:2 FTSA (surr.)	1	%	108
13C2-10:2 FTSA (surr.)	1	%	52
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Feb 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Feb 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Jan 29, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6212
Report #: 1063341
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:35 PM
Due: Feb 5, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	TW3B	Jan 23, 2024		Water	S24-Ja0046268	X
Test Counts						1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	84			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	108			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	106			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	117			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	108			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	75			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	97			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	101			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	98			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	96			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	100			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	84			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	78			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	83			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	72			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	95			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M24-Ja0046231	NCP	%	84			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ja0046231	NCP	%	76			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ja0046231	NCP	%	95			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ja0046231	NCP	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ja0046231	NCP	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	M24-Ja0046231	NCP	%	99			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ja0046231	NCP	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ja0046231	NCP	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ja0046231	NCP	%	101			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ja0046231	NCP	%	62			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ja0046231	NCP	%	88			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M24-Ja0046231	NCP	%	90			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ja0046231	NCP	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ja0046231	NCP	%	100			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ja0046231	NCP	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ja0046231	NCP	%	92			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ja0046231	NCP	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ja0046231	NCP	%	88			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M24-Ja0046231	NCP	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ja0046231	NCP	%	76			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ja0046231	NCP	%	72			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ja0046231	NCP	%	75			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ja0046231	NCP	%	88			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ja0046231	NCP	%	92			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ja0046231	NCP	%	83			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ja0046231	NCP	%	63			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ja0046231	NCP	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ja0046231	NCP	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ja0046231	NCP	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ja0046231	NCP	%	85			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ja0046288	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ja0046288	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	5 Day
Date/Time received	Jan 29, 2024 5:35 PM
Eurofins reference	1063341

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 : 12.4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman

Contact email: jmaltman@geo-logix.com.au

Project Name: Richmond

Project Number: 2301034b

Date Submitted: 25/01/2024

Purchase Order No: PO6212

Quote Reference:

Send Invoice to: accounts@geo-logix.com.au

TAT required: Std.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
	TL03b	23/1/24	X																								X			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	$Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3$
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	$TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB$
B17	$SO_4/NO_3/Fe^{++}/HPC/CUB$
B18	$Cl^-/SO_4/pH$
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature:

Received by: Brendan Carroll Date/Time: 25/1/24 5:37 Signature:

12.9

1063341

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1063348-S**
Project name RICHMOND
Project ID 2301034B
Received Date Jan 29, 2024

Client Sample ID			**TS7B**	**TS9B**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S24-Ja0046337**	**S24-Ja0046338**
Date Sampled			**Jan 09, 2024**	**Jan 22, 2024**
Test/Reference	LOR	Unit		
Sample Properties				
% Moisture	1	%	8.0	9.6
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	58	89
13C5-PFPeA (surr.)	1	%	63	92
13C5-PFHxA (surr.)	1	%	62	94
13C4-PFHpA (surr.)	1	%	56	86
13C8-PFOA (surr.)	1	%	56	82
13C5-PFNA (surr.)	1	%	62	92
13C6-PFDA (surr.)	1	%	66	92
13C2-PFUnDA (surr.)	1	%	49	70
13C2-PFDoDA (surr.)	1	%	62	93
13C2-PFTeDA (surr.)	1	%	63	94
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10
13C8-FOSA (surr.)	1	%	59	82

Client Sample ID			TS7B	TS9B
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-Ja0046337	S24-Ja0046338
Date Sampled			Jan 09, 2024	Jan 22, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D3-N-MeFOSA (surr.)	1	%	75	110
D5-N-EtFOSA (surr.)	1	%	81	108
D7-N-MeFOSE (surr.)	1	%	59	73
D9-N-EtFOSE (surr.)	1	%	72	100
D5-N-EtFOSAA (surr.)	1	%	71	116
D3-N-MeFOSAA (surr.)	1	%	67	117
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	55	84
18O2-PFHxS (surr.)	1	%	55	78
13C8-PFOS (surr.)	1	%	46	64
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	57	85
13C2-6:2 FTSA (surr.)	1	%	58	83
13C2-8:2 FTSA (surr.)	1	%	65	97
13C2-10:2 FTSA (surr.)	1	%	51	82
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Feb 01, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Jan 29, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6209
Report #: 1063348
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:57 PM
Due: Feb 5, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	TS7B	Jan 09, 2024		Soil	S24-Ja0046337		X	X
2	TS9B	Jan 22, 2024		Soil	S24-Ja0046338		X	X
3	TS8B	Jan 11, 2024		Soil	S24-Ja0046339	X		
Test Counts						1	2	2

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	75			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	95			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	88			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	98			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	101			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	108			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	98			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	145			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	97			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	99			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	102			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	96			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	122			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	77			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	94			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	121			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	112			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	88			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ja0046337	CP	%	88			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046337	CP	%	65			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046337	CP	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046337	CP	%	75			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046337	CP	%	82			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046337	CP	%	76			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046337	CP	%	86			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046337	CP	%	85			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046337	CP	%	87			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046337	CP	%	82			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046337	CP	%	90			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046337	CP	%	81			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046337	CP	%	82			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046337	CP	%	91			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046337	CP	%	135			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046337	CP	%	83			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046337	CP	%	83			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046337	CP	%	84			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046337	CP	%	83			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046337	CP	%	123			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046337	CP	%	64			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046337	CP	%	78			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046337	CP	%	81			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046337	CP	%	128			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046337	CP	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046337	CP	%	119			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046337	CP	%	74			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046337	CP	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046337	CP	%	77			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046337	CP	%	80			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	M24-Ja0037583	NCP	%	14	18	24	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ja0049998	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ja0049998	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ja0049998	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ja0049998	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	5 Day
Date/Time received	Jan 29, 2024 5:57 PM
Eurofins reference	1063348

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 : 5.5 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034b **Date Submitted:** 25/01/2024

Purchase Order No: P06209
Quote Reference:
Send Invoice to: accounts@geo-logix.com.au
TAT required: Std

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments
	TS7b	9/01/2024	X					Please Send to Melbourne
	TS8b	11/01/2024	X					
	TS9b	24/1/24	X					

COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
																			X			
																			X		X	
																			X			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	$Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3$
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	$TDS/SO_4/CH_4$/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature:

Received by: Mary Ann Date/Time: 29/1 5:57pm Signature:

5.5°C

1063348

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1063351-S**
Project name RICHMOND
Project ID 2301034B
Received Date Jan 29, 2024

Client Sample ID			GX153/0.4-0.5	GX153/1.4-1.5	GX154/0.4-0.5	GX154/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046356	S24-Ja0046357	S24-Ja0046358	S24-Ja0046359
Date Sampled			Jan 08, 2024	Jan 08, 2024	Jan 08, 2024	Jan 08, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	5.5	5.0	6.8	4.6
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	96	95	92	98
13C5-PFPeA (surr.)	1	%	110	109	101	115
13C5-PFHxA (surr.)	1	%	107	106	110	101
13C4-PFHpA (surr.)	1	%	108	102	98	111
13C8-PFOA (surr.)	1	%	96	95	97	94
13C5-PFNA (surr.)	1	%	104	105	105	110
13C6-PFDA (surr.)	1	%	105	98	96	100
13C2-PFUnDA (surr.)	1	%	111	116	105	109
13C2-PFDoDA (surr.)	1	%	100	96	109	91
13C2-PFTeDA (surr.)	1	%	99	100	93	99
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	91	97	96	103

Client Sample ID			GX153/0.4-0.5	GX153/1.4-1.5	GX154/0.4-0.5	GX154/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046356	S24-Ja0046357	S24-Ja0046358	S24-Ja0046359
Date Sampled			Jan 08, 2024	Jan 08, 2024	Jan 08, 2024	Jan 08, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	109	81	106	115
D5-N-EtFOSA (surr.)	1	%	92	106	91	117
D7-N-MeFOSE (surr.)	1	%	93	82	100	94
D9-N-EtFOSE (surr.)	1	%	88	90	86	93
D5-N-EtFOSAA (surr.)	1	%	117	108	121	128
D3-N-MeFOSAA (surr.)	1	%	135	130	118	141
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	105	96	112	105
18O2-PFHxS (surr.)	1	%	105	103	101	109
13C8-PFOS (surr.)	1	%	106	107	101	109
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	124	113	108	122
13C2-6:2 FTSA (surr.)	1	%	96	101	102	107
13C2-8:2 FTSA (surr.)	1	%	108	112	93	99
13C2-10:2 FTSA (surr.)	1	%	139	135	130	161
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX155/0.5-0.6	GX155/1.4-1.5	GX156/0.4-0.5	GX156/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046360	S24-Ja0046361	S24-Ja0046362	S24-Ja0046363
Date Sampled			Jan 09, 2024	Jan 09, 2024	Jan 09, 2024	Jan 09, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	17	14	8.9	11

Client Sample ID			GX155/0.5-0.6	GX155/1.4-1.5	GX156/0.4-0.5	GX156/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046360	S24-Ja0046361	S24-Ja0046362	S24-Ja0046363
Date Sampled			Jan 09, 2024	Jan 09, 2024	Jan 09, 2024	Jan 09, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	94	102	95	100
13C5-PFPeA (surr.)	1	%	102	106	107	107
13C5-PFHxA (surr.)	1	%	98	112	98	109
13C4-PFHpA (surr.)	1	%	95	115	108	103
13C8-PFOA (surr.)	1	%	84	105	95	93
13C5-PFNA (surr.)	1	%	96	104	96	105
13C6-PFDA (surr.)	1	%	97	100	110	91
13C2-PFUnDA (surr.)	1	%	114	110	118	120
13C2-PFDoDA (surr.)	1	%	90	107	99	107
13C2-PFTeDA (surr.)	1	%	87	108	86	95
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	101	105	99	101
D3-N-MeFOSA (surr.)	1	%	88	102	94	98
D5-N-EtFOSA (surr.)	1	%	90	101	112	98
D7-N-MeFOSE (surr.)	1	%	90	98	93	90
D9-N-EtFOSE (surr.)	1	%	87	92	87	86
D5-N-EtFOSAA (surr.)	1	%	113	119	103	128
D3-N-MeFOSAA (surr.)	1	%	116	134	104	126
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	96	101	107	93

Client Sample ID			GX155/0.5-0.6	GX155/1.4-1.5	GX156/0.4-0.5	GX156/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046360	S24-Ja0046361	S24-Ja0046362	S24-Ja0046363
Date Sampled			Jan 09, 2024	Jan 09, 2024	Jan 09, 2024	Jan 09, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
18O2-PFHxS (surr.)	1	%	92	101	98	96
13C8-PFOS (surr.)	1	%	93	123	104	96
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	85	121	103	100
13C2-6:2 FTSA (surr.)	1	%	92	73	100	101
13C2-8:2 FTSA (surr.)	1	%	101	109	73	84
13C2-10:2 FTSA (surr.)	1	%	142	129	152	154
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX157/0.5-0.6	GX157/1.5-1.6	GX158/0.5-0.6	GX158/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046364	S24-Ja0046365	S24-Ja0046366	S24-Ja0046367
Date Sampled			Jan 10, 2024	Jan 10, 2024	Jan 11, 2024	Jan 11, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	14	9.5	13	29
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	94	94	91	93
13C5-PFPeA (surr.)	1	%	102	107	99	104
13C5-PFHxA (surr.)	1	%	95	106	96	106
13C4-PFHpA (surr.)	1	%	104	101	97	103
13C8-PFOA (surr.)	1	%	96	94	86	105
13C5-PFNA (surr.)	1	%	105	101	93	112
13C6-PFDA (surr.)	1	%	96	100	97	135
13C2-PFUnDA (surr.)	1	%	105	104	117	143

Client Sample ID			GX157/0.5-0.6	GX157/1.5-1.6	GX158/0.5-0.6	GX158/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046364	S24-Ja0046365	S24-Ja0046366	S24-Ja0046367
Date Sampled			Jan 10, 2024	Jan 10, 2024	Jan 11, 2024	Jan 11, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C2-PFDoDA (surr.)	1	%	110	100	112	102
13C2-PFTeDA (surr.)	1	%	102	98	106	110
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	98	104	97	96
D3-N-MeFOSA (surr.)	1	%	104	120	108	97
D5-N-EtFOSA (surr.)	1	%	96	103	105	92
D7-N-MeFOSE (surr.)	1	%	93	88	81	87
D9-N-EtFOSE (surr.)	1	%	94	97	83	94
D5-N-EtFOSAA (surr.)	1	%	130	123	117	176
D3-N-MeFOSAA (surr.)	1	%	115	138	130	INT
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	94	102	102	94
18O2-PFHxS (surr.)	1	%	102	98	97	104
13C8-PFOS (surr.)	1	%	107	100	104	102
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	130	99	81	108
13C2-6:2 FTSA (surr.)	1	%	94	93	99	83
13C2-8:2 FTSA (surr.)	1	%	117	97	82	INT
13C2-10:2 FTSA (surr.)	1	%	163	158	152	INT
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX159/0.4-0.5	GX159/1.4-1.5	GX160/0.5-0.6	GX160/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046368	S24-Ja0046369	S24-Ja0046370	S24-Ja0046371
Date Sampled			Jan 11, 2024	Jan 11, 2024	Jan 12, 2024	Jan 12, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	29	27	8.2	8.5
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	95	89	97	92
13C5-PFPeA (surr.)	1	%	110	96	103	97
13C5-PFHxA (surr.)	1	%	101	97	104	105
13C4-PFHpA (surr.)	1	%	105	93	103	92
13C8-PFOA (surr.)	1	%	94	91	86	86
13C5-PFNA (surr.)	1	%	108	86	98	94
13C6-PFDA (surr.)	1	%	103	91	103	92
13C2-PFUnDA (surr.)	1	%	125	114	120	109
13C2-PFDoDA (surr.)	1	%	110	89	95	96
13C2-PFTeDA (surr.)	1	%	102	86	97	96
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	93	78	93	89
D3-N-MeFOSA (surr.)	1	%	91	90	122	103
D5-N-EtFOSA (surr.)	1	%	103	78	101	108
D7-N-MeFOSE (surr.)	1	%	95	90	108	97
D9-N-EtFOSE (surr.)	1	%	86	79	87	92
D5-N-EtFOSAA (surr.)	1	%	135	128	121	120
D3-N-MeFOSAA (surr.)	1	%	122	122	103	109
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5

Client Sample ID			GX159/0.4-0.5	GX159/1.4-1.5	GX160/0.5-0.6	GX160/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046368	S24-Ja0046369	S24-Ja0046370	S24-Ja0046371
Date Sampled			Jan 11, 2024	Jan 11, 2024	Jan 12, 2024	Jan 12, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	103	86	104	99
18O2-PFHxS (surr.)	1	%	91	83	102	103
13C8-PFOS (surr.)	1	%	109	101	101	94
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	97	96	112	108
13C2-6:2 FTSA (surr.)	1	%	87	85	107	90
13C2-8:2 FTSA (surr.)	1	%	85	97	94	104
13C2-10:2 FTSA (surr.)	1	%	193	INT	167	147
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX161/0.4-0.5	GX161/1.4-1.5	GX163/0.4-0.5	GX163/1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046372	S24-Ja0046373	S24-Ja0046374	S24-Ja0046375
Date Sampled			Jan 12, 2024	Jan 12, 2024	Jan 22, 2024	Jan 22, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	14	10	9.5	12
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	90	97	91	93
13C5-PFPeA (surr.)	1	%	93	105	102	109
13C5-PFHxA (surr.)	1	%	102	104	97	95
13C4-PFHpA (surr.)	1	%	101	99	90	100
13C8-PFOA (surr.)	1	%	92	96	89	93
13C5-PFNA (surr.)	1	%	92	105	98	99

Client Sample ID			GX161/0.4-0.5	GX161/1.4-1.5	GX163/0.4-0.5	GX163/1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046372	S24-Ja0046373	S24-Ja0046374	S24-Ja0046375
Date Sampled			Jan 12, 2024	Jan 12, 2024	Jan 22, 2024	Jan 22, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C6-PFDA (surr.)	1	%	103	110	100	89
13C2-PFUnDA (surr.)	1	%	96	133	112	103
13C2-PFDoDA (surr.)	1	%	100	105	100	88
13C2-PFTeDA (surr.)	1	%	104	113	95	95
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	96	99	101	95
D3-N-MeFOSA (surr.)	1	%	98	101	98	115
D5-N-EtFOSA (surr.)	1	%	89	104	93	104
D7-N-MeFOSE (surr.)	1	%	87	105	100	88
D9-N-EtFOSE (surr.)	1	%	85	83	89	89
D5-N-EtFOSAA (surr.)	1	%	123	158	141	125
D3-N-MeFOSAA (surr.)	1	%	121	133	119	123
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	97	103	102	96
18O2-PFHxS (surr.)	1	%	98	102	100	92
13C8-PFOS (surr.)	1	%	91	107	109	108
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	92	98	121	104
13C2-6:2 FTSA (surr.)	1	%	101	88	96	99
13C2-8:2 FTSA (surr.)	1	%	87	88	84	89
13C2-10:2 FTSA (surr.)	1	%	171	INT	199	162

Client Sample ID			GX161/0.4-0.5	GX161/1.4-1.5	GX163/0.4-0.5	GX163/1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046372	S24-Ja0046373	S24-Ja0046374	S24-Ja0046375
Date Sampled			Jan 12, 2024	Jan 12, 2024	Jan 22, 2024	Jan 22, 2024
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			DS7B	DS9B
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-Ja0046376	S24-Ja0046377
Date Sampled			Jan 09, 2024	Jan 22, 2024
Test/Reference	LOR	Unit		
Sample Properties				
% Moisture	1	%	8.6	9.4
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	91	96
13C5-PFPeA (surr.)	1	%	108	108
13C5-PFHxA (surr.)	1	%	104	114
13C4-PFHpA (surr.)	1	%	98	107
13C8-PFOA (surr.)	1	%	91	92
13C5-PFNA (surr.)	1	%	110	108
13C6-PFDA (surr.)	1	%	108	108
13C2-PFUnDA (surr.)	1	%	98	110
13C2-PFDoDA (surr.)	1	%	93	95
13C2-PFTeDA (surr.)	1	%	99	97
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10
13C8-FOSA (surr.)	1	%	117	101

Client Sample ID			DS7B	DS9B
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-Ja0046376	S24-Ja0046377
Date Sampled			Jan 09, 2024	Jan 22, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D3-N-MeFOSA (surr.)	1	%	96	98
D5-N-EtFOSA (surr.)	1	%	102	107
D7-N-MeFOSE (surr.)	1	%	98	88
D9-N-EtFOSE (surr.)	1	%	84	83
D5-N-EtFOSAA (surr.)	1	%	86	131
D3-N-MeFOSAA (surr.)	1	%	103	119
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	107	99
18O2-PFHxS (surr.)	1	%	92	103
13C8-PFOS (surr.)	1	%	110	114
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	97	102
13C2-6:2 FTSA (surr.)	1	%	90	91
13C2-8:2 FTSA (surr.)	1	%	139	106
13C2-10:2 FTSA (surr.)	1	%	128	196
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Jan 29, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Jan 29, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6209
Report #: 1063351
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:57 PM
Due: Feb 5, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX153/0.4-0.5	Jan 08, 2024		Soil	S24-Ja0046356		X	X
2	GX153/1.4-1.5	Jan 08, 2024		Soil	S24-Ja0046357		X	X
3	GX154/0.4-0.5	Jan 08, 2024		Soil	S24-Ja0046358		X	X
4	GX154/1.4-1.5	Jan 08, 2024		Soil	S24-Ja0046359		X	X
5	GX155/0.5-0.6	Jan 09, 2024		Soil	S24-Ja0046360		X	X
6	GX155/1.4-1.5	Jan 09, 2024		Soil	S24-Ja0046361		X	X
7	GX156/0.4-0.5	Jan 09, 2024		Soil	S24-Ja0046362		X	X
8	GX156/1.4-1.5	Jan 09, 2024		Soil	S24-Ja0046363		X	X
9	GX157/0.5-0.6	Jan 10, 2024		Soil	S24-Ja0046364		X	X
10	GX157/1.5-1.6	Jan 10, 2024		Soil	S24-Ja0046365		X	X
11	GX158/0.5-0.6	Jan 11, 2024		Soil	S24-Ja0046366		X	X
12	GX158/1.4-1.5	Jan 11, 2024		Soil	S24-Ja0046367		X	X
13	GX159/0.4-0.5	Jan 11, 2024		Soil	S24-Ja0046368		X	X

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Eurofins Environment Testing Australia Pty Ltd
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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

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NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6209
Report #: 1063351
Phone: 02 9979 1722
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Received: Jan 29, 2024 5:57 PM
Due: Feb 5, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	GX159/1.4-1.5	Jan 11, 2024		Soil	S24-Ja0046369		X	X
15	GX160/0.5-0.6	Jan 12, 2024		Soil	S24-Ja0046370		X	X
16	GX160/1.4-1.5	Jan 12, 2024		Soil	S24-Ja0046371		X	X
17	GX161/0.4-0.5	Jan 12, 2024		Soil	S24-Ja0046372		X	X
18	GX161/1.4-1.5	Jan 12, 2024		Soil	S24-Ja0046373		X	X
19	GX163/0.4-0.5	Jan 22, 2024		Soil	S24-Ja0046374		X	X
20	GX163/1.5-1.6	Jan 22, 2024		Soil	S24-Ja0046375		X	X
21	DS7B	Jan 09, 2024		Soil	S24-Ja0046376		X	X
22	DS9B	Jan 22, 2024		Soil	S24-Ja0046377		X	X
23	STOCK	Jan 12, 2024		Water	S24-Ja0046378			X
24	STORE	Jan 12, 2024		Water	S24-Ja0046379			X
25	BLANK3	Jan 08, 2024		Water	S24-Ja0046380			X
26	R101	Jan 22, 2024		Water	S24-Ja0046381			X
27	GX153/2.9-3.0	Jan 08, 2024		Soil	S24-Ja0046382	X		
28	GX154/3-3.1	Jan 08, 2024		Soil	S24-Ja0046383	X		
29	GX155/2.9-3.0	Jan 09, 2024		Soil	S24-Ja0046384	X		

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Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
30	GX156/3.0-3.1	Jan 09, 2024		Soil	S24-Ja0046385	X		
31	GX157/3.0-3.1	Jan 10, 2024		Soil	S24-Ja0046386	X		
32	GX158/3.0-3.1	Jan 11, 2024		Soil	S24-Ja0046387	X		
33	GX159/3.0-3.1	Jan 11, 2024		Soil	S24-Ja0046388	X		
34	GX160/3.0-3.1	Jan 12, 2024		Soil	S24-Ja0046389	X		
35	GX161/2.9-3.0	Jan 12, 2024		Soil	S24-Ja0046390	X		
36	GX163/1.0-1.1	Jan 22, 2024		Soil	S24-Ja0046391	X		
37	DS8B	Jan 11, 2024		Soil	S24-Ja0046392	X		
Test Counts						11	22	26

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	101			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	89			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	94			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	87			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	109			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	104			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	112			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	108			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	92			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	107			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	111			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	113			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	105			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	105			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	100			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	98			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	112			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	103			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	106			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	117			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	79			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	83			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ja0046365	CP	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046365	CP	%	116			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046365	CP	%	102			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046365	CP	%	112			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046365	CP	%	99			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046365	CP	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046365	CP	%	118			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046365	CP	%	103			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046365	CP	%	113			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046365	CP	%	107			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046365	CP	%	114			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046365	CP	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046365	CP	%	99			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046365	CP	%	101			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046365	CP	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046365	CP	%	102			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046365	CP	%	103			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046365	CP	%	117			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046365	CP	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046365	CP	%	114			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046365	CP	%	98			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046365	CP	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046365	CP	%	94			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046365	CP	%	117			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046365	CP	%	102			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046365	CP	%	100			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046365	CP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046365	CP	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046365	CP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046365	CP	%	102			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046364	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046364	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046364	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046364	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046369	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046369	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046369	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046369	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Ja0046370	CP	%	8.2	8.1	1.7	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046374	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046374	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046374	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046374	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Ursula Long — Analytical Services Manager



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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Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1063351-W**
Project name RICHMOND
Project ID 2301034B
Received Date Jan 29, 2024

Client Sample ID			**STOCK**	**STORE**	**BLANK3**	**R101**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S24-Ja0046378**	**S24-Ja0046379**	**S24-Ja0046380**	**S24-Ja0046381**
Date Sampled			**Jan 12, 2024**	**Jan 12, 2024**	**Jan 08, 2024**	**Jan 22, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	104	115	114	100
13C5-PFPeA (surr.)	1	%	110	125	127	115
13C5-PFHxA (surr.)	1	%	116	123	133	115
13C4-PFHpA (surr.)	1	%	106	112	121	118
13C8-PFOA (surr.)	1	%	95	99	115	98
13C5-PFNA (surr.)	1	%	96	90	103	106
13C6-PFDA (surr.)	1	%	79	68	92	104
13C2-PFUnDA (surr.)	1	%	73	52	77	97
13C2-PFDoDA (surr.)	1	%	64	34	64	87
13C2-PFTeDA (surr.)	1	%	41	20	34	59
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	75	68	105	89
D3-N-MeFOSA (surr.)	1	%	63	46	65	73
D5-N-EtFOSA (surr.)	1	%	60	34	52	74

Client Sample ID			STOCK	STORE	BLANK3	R101
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ja0046378	S24-Ja0046379	S24-Ja0046380	S24-Ja0046381
Date Sampled			Jan 12, 2024	Jan 12, 2024	Jan 08, 2024	Jan 22, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D7-N-MeFOSE (surr.)	1	%	64	48	75	76
D9-N-EtFOSE (surr.)	1	%	64	36	55	77
D5-N-EtFOSAA (surr.)	1	%	70	48	81	103
D3-N-MeFOSAA (surr.)	1	%	71	57	106	109
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	112	110	110	107
18O2-PFHxS (surr.)	1	%	101	103	108	95
13C8-PFOS (surr.)	1	%	88	79	93	95
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	125	155	108	103
13C2-6:2 FTSA (surr.)	1	%	89	104	114	95
13C2-8:2 FTSA (surr.)	1	%	94	71	93	109
13C2-10:2 FTSA (surr.)	1	%	69	29	64	86
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Jan 31, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Jan 31, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Jan 29, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Jan 29, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Jan 29, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6209
Report #: 1063351
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:57 PM
Due: Feb 5, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX153/0.4-0.5	Jan 08, 2024		Soil	S24-Ja0046356		X	X
2	GX153/1.4-1.5	Jan 08, 2024		Soil	S24-Ja0046357		X	X
3	GX154/0.4-0.5	Jan 08, 2024		Soil	S24-Ja0046358		X	X
4	GX154/1.4-1.5	Jan 08, 2024		Soil	S24-Ja0046359		X	X
5	GX155/0.5-0.6	Jan 09, 2024		Soil	S24-Ja0046360		X	X
6	GX155/1.4-1.5	Jan 09, 2024		Soil	S24-Ja0046361		X	X
7	GX156/0.4-0.5	Jan 09, 2024		Soil	S24-Ja0046362		X	X
8	GX156/1.4-1.5	Jan 09, 2024		Soil	S24-Ja0046363		X	X
9	GX157/0.5-0.6	Jan 10, 2024		Soil	S24-Ja0046364		X	X
10	GX157/1.5-1.6	Jan 10, 2024		Soil	S24-Ja0046365		X	X
11	GX158/0.5-0.6	Jan 11, 2024		Soil	S24-Ja0046366		X	X
12	GX158/1.4-1.5	Jan 11, 2024		Soil	S24-Ja0046367		X	X
13	GX159/0.4-0.5	Jan 11, 2024		Soil	S24-Ja0046368		X	X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6209
Report #: 1063351
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:57 PM
Due: Feb 5, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	GX159/1.4-1.5	Jan 11, 2024		Soil	S24-Ja0046369		X	X
15	GX160/0.5-0.6	Jan 12, 2024		Soil	S24-Ja0046370		X	X
16	GX160/1.4-1.5	Jan 12, 2024		Soil	S24-Ja0046371		X	X
17	GX161/0.4-0.5	Jan 12, 2024		Soil	S24-Ja0046372		X	X
18	GX161/1.4-1.5	Jan 12, 2024		Soil	S24-Ja0046373		X	X
19	GX163/0.4-0.5	Jan 22, 2024		Soil	S24-Ja0046374		X	X
20	GX163/1.5-1.6	Jan 22, 2024		Soil	S24-Ja0046375		X	X
21	DS7B	Jan 09, 2024		Soil	S24-Ja0046376		X	X
22	DS9B	Jan 22, 2024		Soil	S24-Ja0046377		X	X
23	STOCK	Jan 12, 2024		Water	S24-Ja0046378			X
24	STORE	Jan 12, 2024		Water	S24-Ja0046379			X
25	BLANK3	Jan 08, 2024		Water	S24-Ja0046380			X
26	R101	Jan 22, 2024		Water	S24-Ja0046381			X
27	GX153/2.9-3.0	Jan 08, 2024		Soil	S24-Ja0046382	X		
28	GX154/3-3.1	Jan 08, 2024		Soil	S24-Ja0046383	X		
29	GX155/2.9-3.0	Jan 09, 2024		Soil	S24-Ja0046384	X		

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
30	GX156/3.0-3.1	Jan 09, 2024		Soil	S24-Ja0046385	X		
31	GX157/3.0-3.1	Jan 10, 2024		Soil	S24-Ja0046386	X		
32	GX158/3.0-3.1	Jan 11, 2024		Soil	S24-Ja0046387	X		
33	GX159/3.0-3.1	Jan 11, 2024		Soil	S24-Ja0046388	X		
34	GX160/3.0-3.1	Jan 12, 2024		Soil	S24-Ja0046389	X		
35	GX161/2.9-3.0	Jan 12, 2024		Soil	S24-Ja0046390	X		
36	GX163/1.0-1.1	Jan 22, 2024		Soil	S24-Ja0046391	X		
37	DS8B	Jan 11, 2024		Soil	S24-Ja0046392	X		
Test Counts						11	22	26

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	95			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	108			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	102			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	84			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	100			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	95			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	99			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	101			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	90			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	105			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	86			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	98			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	111			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	97			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
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ja0046255	NCP	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046255	NCP	%	98			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046255	NCP	%	87			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046255	NCP	%	89			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046255	NCP	%	107			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046255	NCP	%	92			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046255	NCP	%	96			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046255	NCP	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046255	NCP	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046255	NCP	%	117			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046255	NCP	%	91			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046255	NCP	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046255	NCP	%	89			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046255	NCP	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046255	NCP	%	88			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046255	NCP	%	103			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046255	NCP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046255	NCP	%	95			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046255	NCP	%	85			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046255	NCP	%	89			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046255	NCP	%	84			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046255	NCP	%	105			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046255	NCP	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046255	NCP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046255	NCP	%	65			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046255	NCP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046255	NCP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046255	NCP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046255	NCP	%	89			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Ursula Long — Analytical Services Manager



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.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
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Welshpool
WA 6106
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NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	5 Day
Date/Time received	Jan 29, 2024 5:57 PM
Eurofins reference	1063351

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 : 5.5 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034b
Date Submitted: 25/01/2024

Purchase Order No: PO6208
Quote Reference:
Send Invoice to: accounts@geo-logix.com.au
TAT required: Std.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
	GX153/0.4-0.5	8/01/2024	X																									X		
	GX153/1.4-1.5	8/01/2024	X																									X		
	GX153/2.9-3.0	8/01/2024	X																										X	
	GX154/0.4-0.5	8/01/2024	X																									X		
	GX154/1.4-1.5	8/01/2024	X																									X		
	GX154/3-3.1	8/01/2024	X																										X	
	GX155/0.5-0.6	9/01/2024	X																									X		
	GX155/1.4-1.5	9/01/2024	X																									X		
	GX155/2.9-3.0	9/01/2024	X																										X	
	GX156/0.4-0.5	9/01/2024	X																									X		
	GX156/1.4-1.5	9/01/2024	X																									X		
	GX156/3.0-3.1	9/01/2024	X																										X	
	GX157/0.5-0.6	10/01/2024	X																									X		
	GX157/1.5-1.6	10/01/2024	X																									X		
	GX157/3.0-3.1	10/01/2024	X																										X	
	GX158/0.5-0.6	11/01/2024	X																									X		
	GX158/1.4-1.5	11/01/2024	X																									X		
	GX158/3.0-3.1	11/01/2024	X																										X	

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature:

Received by: Brendan Conolly Date/Time: 25/1/24 5:57 Signature:

S.E.

1063351

Version: V1
Issued: June 2015
Review: January 2022

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Warriewood, NSW 2102
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CHAIN OF CUSTODY

Purchase Order No: PO6208

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034b Date Submitted: 25/01/2024

Quote Reference:
Send Invoice to: accounts@geo-logix.com.au
TAT required: Std.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
	GX159/0.4-0.5	11/01/2024	X																									X		
	GX159/1.4-1.5	11/01/2024	X																									X		
	GX159/3.0-3.1	11/01/2024	X																										X	
	GX160/0.5-0.6	12/01/2024	X																									X		
	GX160/1.4-1.5	12/01/2024	X																									X		
	GX160/3.0-3.1	12/01/2024	X																										X	
	GX161/0.4-0.5	12/01/2024	X																									X		
	GX161/1.4-1.5	12/01/2024	X																									X		
	GX161/2.9-3.0	12/01/2024	X																										X	
	GX163/0.4-0.5	22/01/2024	X																									X		
	GX163/1.0-1.1	22/01/2024	X																										X	
	GX163/1.5-1.6	22/01/2024	X																									X		
	DS7b	9/01/2024	X																									X		
	DS8b	11/01/2024	X																										X	
	DS9b	22/01/2024	X																									X		
	STOCK	12/01/2024		X																								X		
	STORE	12/01/2024		X																								X		
	BLANK3	8/01/2024		X																								X		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature: Received by: Date/Time: Signature:

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Purchase Order No: PO6208

Project Manager: Jenna Maltman

Contact email: jmaltman@geo-logix.com.au

Project Name: Richmond

Project Number: 2301034b

Date Submitted: 25/01/2024

Quote Reference:

Send Invoice to: accounts@geo-logix.com.au

TAT required: Std.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
	R101	22/1/2024		x																								x		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	$Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3$
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	$TDS/SO_4/CH_4$/Alk/BOD/COD/HPC/CUB
B17	$SO_4/NO_3/Fe^{++}$/HPC/CUB
B18	Cl^-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature:

Received by: Date/Time: Signature:

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1065548-S-V2**
Project name RICHMOND
Project ID 2301034C
Received Date Feb 02, 2024

Client Sample ID			GX162/0.4-0.5	GX162/1.4-1.5	GX172/0.4-0.5	GX172/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011040	S24-Fe0011041	S24-Fe0011042	S24-Fe0011043
Date Sampled			Jan 30, 2024	Jan 30, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	16	15	12	10.0
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	90	88	88	91
13C5-PFPeA (surr.)	1	%	94	98	96	95
13C5-PFHxA (surr.)	1	%	106	108	96	100
13C4-PFHpA (surr.)	1	%	91	83	105	93
13C8-PFOA (surr.)	1	%	91	98	109	98
13C5-PFNA (surr.)	1	%	100	102	91	107
13C6-PFDA (surr.)	1	%	104	102	108	106
13C2-PFUnDA (surr.)	1	%	121	117	114	99
13C2-PFDoDA (surr.)	1	%	116	104	106	110
13C2-PFTeDA (surr.)	1	%	134	107	145	130
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	98	103	103	95

Client Sample ID			GX162/0.4-0.5	GX162/1.4-1.5	GX172/0.4-0.5	GX172/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011040	S24-Fe0011041	S24-Fe0011042	S24-Fe0011043
Date Sampled			Jan 30, 2024	Jan 30, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	113	116	100	112
D5-N-EtFOSA (surr.)	1	%	123	130	128	130
D7-N-MeFOSE (surr.)	1	%	107	110	110	121
D9-N-EtFOSE (surr.)	1	%	109	111	102	101
D5-N-EtFOSAA (surr.)	1	%	123	102	126	120
D3-N-MeFOSAA (surr.)	1	%	128	121	132	121
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	113	95	104	105
18O2-PFHxS (surr.)	1	%	124	109	110	112
13C8-PFOS (surr.)	1	%	127	111	110	113
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	88	120	105	93
13C2-6:2 FTSA (surr.)	1	%	91	85	110	102
13C2-8:2 FTSA (surr.)	1	%	123	121	140	137
13C2-10:2 FTSA (surr.)	1	%	128	120	135	118
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX176/0.4-0.5	GX176/1.4-1.5	DS1C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011044	S24-Fe0011045	S24-Fe0011046
Date Sampled			Jan 29, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit			
Sample Properties					
% Moisture	1	%	38	16	12

Client Sample ID			GX176/0.4-0.5	GX176/1.4-1.5	DS1C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011044	S24-Fe0011045	S24-Fe0011046
Date Sampled			Jan 29, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	89	89	91
13C5-PFPeA (surr.)	1	%	90	95	96
13C5-PFHxA (surr.)	1	%	91	95	104
13C4-PFHpA (surr.)	1	%	98	92	95
13C8-PFOA (surr.)	1	%	97	91	95
13C5-PFNA (surr.)	1	%	97	107	102
13C6-PFDA (surr.)	1	%	113	100	115
13C2-PFUnDA (surr.)	1	%	104	121	114
13C2-PFDoDA (surr.)	1	%	118	96	119
13C2-PFTeDA (surr.)	1	%	134	130	125
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	101	117	105
D3-N-MeFOSA (surr.)	1	%	102	114	109
D5-N-EtFOSA (surr.)	1	%	116	124	117
D7-N-MeFOSE (surr.)	1	%	93	112	113
D9-N-EtFOSE (surr.)	1	%	98	116	108
D5-N-EtFOSAA (surr.)	1	%	120	114	137
D3-N-MeFOSAA (surr.)	1	%	96	115	109
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	99	97	107

Client Sample ID			GX176/0.4-0.5	GX176/1.4-1.5	DS1C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011044	S24-Fe0011045	S24-Fe0011046
Date Sampled			Jan 29, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonic acids (PFSAs)					
18O2-PFHxS (surr.)	1	%	104	100	108
13C8-PFOS (surr.)	1	%	111	107	115
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	81	115	97
13C2-6:2 FTSA (surr.)	1	%	76	93	118
13C2-8:2 FTSA (surr.)	1	%	92	100	102
13C2-10:2 FTSA (surr.)	1	%	179	154	160
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Feb 06, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Feb 06, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06231
Report #: 1065548
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 2, 2024 5:40 PM
Due: Feb 9, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX162/0.4-0.5	Jan 30, 2024		Soil	S24-Fe0011040		X	X
2	GX162/1.4-1.5	Jan 30, 2024		Soil	S24-Fe0011041		X	X
3	GX172/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011042		X	X
4	GX172/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011043		X	X
5	GX176/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011044		X	X
6	GX176/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011045		X	X
7	DS1C	Jan 29, 2024		Soil	S24-Fe0011046		X	X
8	BLANK	Jan 30, 2024		Water	S24-Fe0011047			X
9	R2	Jan 29, 2024		Water	S24-Fe0011048			X
10	R3	Jan 29, 2024		Water	S24-Fe0011049			X
11	R4	Jan 30, 2024		Water	S24-Fe0011050			X
12	GX162/2.9-3.0	Jan 30, 2024		Soil	S24-Fe0011051	X		
13	GX170/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011052	X		

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
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Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 2, 2024 5:40 PM
Due: Feb 9, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	GX172/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011053	X		
15	GX176/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011054	X		
16	DS2C	Jan 30, 2024		Soil	S24-Fe0011055	X		
Test Counts						5	7	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
PFASs Summations							
Sum of US EPA PFAS (PFOS + PFOA)*	ug/kg	-			5	N/A	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	103			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	111			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	110			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	104			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	108			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	115			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	109			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	101			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	113			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	110			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	112			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	109			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	110			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	114			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	102			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	103			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	106			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	123			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Fe0011040	CP	%	103			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0011040	CP	%	110			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0011040	CP	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0011040	CP	%	119			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0011040	CP	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0011040	CP	%	122			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0011040	CP	%	127			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0011040	CP	%	119			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0011040	CP	%	114			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0011040	CP	%	104			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0011040	CP	%	118			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	R24-Fe0007770	NCP	%	114			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	R24-Fe0007770	NCP	%	78			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	R24-Fe0007770	NCP	%	121			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	R24-Fe0007770	NCP	%	119			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	R24-Fe0007770	NCP	%	101			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	R24-Fe0007770	NCP	%	85			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	R24-Fe0007770	NCP	%	96			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	R24-Fe0007770	NCP	%	102			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	R24-Fe0007770	NCP	%	101			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	R24-Fe0007770	NCP	%	104			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	R24-Fe0007770	NCP	%	95			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	R24-Fe0007770	NCP	%	99			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	R24-Fe0007770	NCP	%	95			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	R24-Fe0007770	NCP	%	52			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	R24-Fe0007770	NCP	%	99			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	R24-Fe0007770	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	R24-Fe0007770	NCP	%	69			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	R24-Fe0007770	NCP	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	R24-Fe0007770	NCP	%	86			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Fe0010975	NCP	%	9.1	9.2	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Fe0011043	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Fe0011043	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

This report has been revised (V2) to correct the sampling date for samples S24-Fe0011048 and S24-Fe0011049 from Jan 30, 2024 to Jan 29, 2024 as per client request.

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:

Asim Khan	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Sample Properties



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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Geo-Logix P/L
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Warriewood
NSW 2102

NATA Accredited
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Site Number 18217

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Attention: **Jenna Maltman**

Report **1065548-W-V2**
Project name RICHMOND
Project ID 2301034C
Received Date Feb 02, 2024

Client Sample ID			**BLANK**	**R2**	**R3**	**R4**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S24-Fe0011047**	**S24-Fe0011048**	**S24-Fe0011049**	**S24-Fe0011050**
Date Sampled			**Jan 30, 2024**	**Jan 29, 2024**	**Jan 29, 2024**	**Jan 30, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	99	92	99	97
13C5-PFPeA (surr.)	1	%	106	107	105	105
13C5-PFHxA (surr.)	1	%	110	103	108	103
13C4-PFHpA (surr.)	1	%	99	94	107	99
13C8-PFOA (surr.)	1	%	115	111	109	108
13C5-PFNA (surr.)	1	%	94	91	101	88
13C6-PFDA (surr.)	1	%	93	78	89	76
13C2-PFUnDA (surr.)	1	%	83	64	74	62
13C2-PFDoDA (surr.)	1	%	68	50	60	46
13C2-PFTeDA (surr.)	1	%	29	25	30	28
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	104	105	98	94
D3-N-MeFOSA (surr.)	1	%	95	90	85	68
D5-N-EtFOSA (surr.)	1	%	93	104	68	69

Client Sample ID			BLANK	R2	R3	R4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Fe0011047	S24-Fe0011048	S24-Fe0011049	S24-Fe0011050
Date Sampled			Jan 30, 2024	Jan 29, 2024	Jan 29, 2024	Jan 30, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D7-N-MeFOSE (surr.)	1	%	93	99	82	89
D9-N-EtFOSE (surr.)	1	%	99	103	85	86
D5-N-EtFOSAA (surr.)	1	%	90	73	80	69
D3-N-MeFOSAA (surr.)	1	%	87	78	86	80
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	109	107	109	105
18O2-PFHxS (surr.)	1	%	109	102	114	107
13C8-PFOS (surr.)	1	%	99	77	95	77
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	113	101	108	106
13C2-6:2 FTSA (surr.)	1	%	115	95	109	111
13C2-8:2 FTSA (surr.)	1	%	97	95	96	91
13C2-10:2 FTSA (surr.)	1	%	78	62	58	57
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Feb 06, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06231
Report #: 1065548
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 2, 2024 5:40 PM
Due: Feb 9, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX162/0.4-0.5	Jan 30, 2024		Soil	S24-Fe0011040		X	X
2	GX162/1.4-1.5	Jan 30, 2024		Soil	S24-Fe0011041		X	X
3	GX172/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011042		X	X
4	GX172/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011043		X	X
5	GX176/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011044		X	X
6	GX176/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011045		X	X
7	DS1C	Jan 29, 2024		Soil	S24-Fe0011046		X	X
8	BLANK	Jan 30, 2024		Water	S24-Fe0011047			X
9	R2	Jan 29, 2024		Water	S24-Fe0011048			X
10	R3	Jan 29, 2024		Water	S24-Fe0011049			X
11	R4	Jan 30, 2024		Water	S24-Fe0011050			X
12	GX162/2.9-3.0	Jan 30, 2024		Soil	S24-Fe0011051	X		
13	GX170/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011052	X		

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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

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Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	GX172/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011053	X		
15	GX176/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011054	X		
16	DS2C	Jan 30, 2024		Soil	S24-Fe0011055	X		
Test Counts						5	7	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	99			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	103			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	95			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	107			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	132			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	100			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	133			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	125			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	103			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	83			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	109			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	100			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	96			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	101			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	76			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	120			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	73			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	150			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	105			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	91			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	120			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Fe0010016	NCP	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0010016	NCP	%	112			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0010016	NCP	%	109			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0010016	NCP	%	113			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0010016	NCP	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0010016	NCP	%	115			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0010016	NCP	%	112			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0010016	NCP	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0010016	NCP	%	97			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0010016	NCP	%	103			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0010016	NCP	%	106			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Fe0010016	NCP	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Fe0010016	NCP	%	88			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Fe0010016	NCP	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Fe0010016	NCP	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Fe0010016	NCP	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Fe0010016	NCP	%	88			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Fe0010016	NCP	%	113			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Fe0010016	NCP	%	114			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Fe0010016	NCP	%	86			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Fe0010016	NCP	%	104			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Fe0010016	NCP	%	102			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Fe0010016	NCP	%	98			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Fe0010016	NCP	%	126			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Fe0010016	NCP	%	102			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Fe0010016	NCP	%	78			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Fe0010016	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Fe0010016	NCP	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Fe0010016	NCP	%	138			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Fe0010016	NCP	%	89			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) to correct the sampling date for samples S24-Fe0011048 and S24-Fe0011049 from Jan 30, 2024 to Jan 29, 2024 as per client request.

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:

Asim Khan Analytical Services Manager



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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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NZBN: 9429046024954

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Feb 2, 2024 5:40 PM
Eurofins reference	1065548

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 : 4.3 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034C
Date Submitted: 2/2/24

Page ___ of ___
Purchase Order No: PO6231
Quote Reference:
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS 30 Compounds	Hold	SUITE
	GX162/0.4-0.5	30/1/24	✓						X		
	GX162/1.4-1.5	↓	✓						X		
	GX162/2.9-3.0	↓	✓							X	
	GX170/0.4-0.5	29/1/24	✓							X	
	GX172/0.4-0.5	↓	✓						X		
	GX172/1.4-1.5		✓						X		
	GX172/2.9-3.0		✓							X	
	GX176/0.4-0.5		✓						X		
	GX176/1.4-1.5		✓						X		
	GX176/2.9-3.0	↓	✓							X	
	DS1C	29/1/24	✓						X		
	DS2C	30/1/24	✓							X	
	BLANK			✓					X		
	R2			✓					X		
	R3			✓					X		
	R4			✓					X		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: JV Date/Time: 2/2/24 Signature:
Received by: Date/Time: 2/2/24 Signature:
4.7 15:40

10655548

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 4 June 2024 4:08 PM
To: EnviroSampleNSW@eurofins.com
Cc: Asim Khan
Subject: 1065548-W sample date amendments

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

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Hi Asim,

Could please get the following sample dates corrected for Report #1065548-W:

GX Reference	Eurofins Reference	Date
R2	**S24-Fe0011048**	29/01/2024
R3	**S24-Fe0011049**	29/01/2024

Kind Regards,

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au



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Warriewood
NSW 2102

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Attention: **Jenna Maltman**

Report **1081382-W**
Project name RICHMOND
Project ID 2301034B
Received Date Mar 25, 2024

Client Sample ID			**GW119**	**GW120**	**GW128**	**GW131**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S24-Ma0060195**	**S24-Ma0060196**	**S24-Ma0060197**	**S24-Ma0060198**
Date Sampled			**Mar 21, 2024**	**Mar 21, 2024**	**Mar 22, 2024**	**Mar 21, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	0.06
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.01	0.02
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	112	120	113	96
13C5-PFPeA (surr.)	1	%	127	121	122	91
13C5-PFHxA (surr.)	1	%	134	134	126	123
13C4-PFHpA (surr.)	1	%	122	122	116	124
13C8-PFOA (surr.)	1	%	135	136	130	121
13C5-PFNA (surr.)	1	%	133	114	119	113
13C6-PFDA (surr.)	1	%	131	121	108	112
13C2-PFUnDA (surr.)	1	%	114	91	102	94
13C2-PFDoDA (surr.)	1	%	100	81	89	87
13C2-PFTeDA (surr.)	1	%	70	64	47	78
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	119	99	117	88
D3-N-MeFOSA (surr.)	1	%	101	92	96	83

Client Sample ID			GW119	GW120	GW128	GW131
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060195	S24-Ma0060196	S24-Ma0060197	S24-Ma0060198
Date Sampled			Mar 21, 2024	Mar 21, 2024	Mar 22, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	111	81	94	88
D7-N-MeFOSE (surr.)	1	%	103	85	97	86
D9-N-EtFOSE (surr.)	1	%	104	84	86	93
D5-N-EtFOSAA (surr.)	1	%	127	99	126	103
D3-N-MeFOSAA (surr.)	1	%	111	89	114	95
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.03	< 0.01	0.08	0.03
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.05	0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	0.02	< 0.01	0.04	0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.09	< 0.01	0.19	0.09
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	125	128	111	118
18O2-PFHxS (surr.)	1	%	119	118	116	107
13C8-PFOS (surr.)	1	%	107	94	104	96
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	142	180	139	192
13C2-6:2 FTSA (surr.)	1	%	101	149	96	107
13C2-8:2 FTSA (surr.)	1	%	116	105	97	98
13C2-10:2 FTSA (surr.)	1	%	86	77	73	83
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.09	< 0.01	0.19	0.09
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.09	< 0.01	0.19	0.09
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.12	< 0.05	0.28	0.21
Sum of PFASs (n=30)*	0.1	ug/L	0.14	< 0.1	0.37	0.23

Client Sample ID			GW137	GW136	GW142	GW146
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060199	S24-Ma0060200	S24-Ma0060201	S24-Ma0060202
Date Sampled			Mar 21, 2024	Mar 21, 2024	Mar 21, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.09	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.04	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	0.03	< 0.01	< 0.01

Client Sample ID			GW137	GW136	GW142	GW146
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060199	S24-Ma0060200	S24-Ma0060201	S24-Ma0060202
Date Sampled			Mar 21, 2024	Mar 21, 2024	Mar 21, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	100	112	108	120
13C5-PFPeA (surr.)	1	%	94	89	115	125
13C5-PFHxA (surr.)	1	%	129	129	122	137
13C4-PFHpA (surr.)	1	%	122	137	117	136
13C8-PFOA (surr.)	1	%	134	135	120	136
13C5-PFNA (surr.)	1	%	119	137	117	123
13C6-PFDA (surr.)	1	%	114	145	127	131
13C2-PFUnDA (surr.)	1	%	95	104	109	126
13C2-PFDoDA (surr.)	1	%	86	74	98	105
13C2-PFTeDA (surr.)	1	%	62	30	71	80
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	100	122	105	118
D3-N-MeFOSA (surr.)	1	%	80	85	96	110
D5-N-EtFOSA (surr.)	1	%	79	87	100	110
D7-N-MeFOSE (surr.)	1	%	86	85	111	100
D9-N-EtFOSE (surr.)	1	%	77	87	103	98
D5-N-EtFOSAA (surr.)	1	%	97	126	117	126
D3-N-MeFOSAA (surr.)	1	%	87	107	109	113
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	0.02	0.05	< 0.01	0.02
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	0.02	0.02	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	0.05	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.15	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	0.08	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	126	130	120	129
18O2-PFHxS (surr.)	1	%	122	130	114	121
13C8-PFOS (surr.)	1	%	106	112	106	112

Client Sample ID			GW137	GW136	GW142	GW146
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060199	S24-Ma0060200	S24-Ma0060201	S24-Ma0060202
Date Sampled			Mar 21, 2024	Mar 21, 2024	Mar 21, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	INT	INT	120	133
13C2-6:2 FTSA (surr.)	1	%	136	INT	111	116
13C2-8:2 FTSA (surr.)	1	%	103	173	97	107
13C2-10:2 FTSA (surr.)	1	%	68	83	93	119
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.23	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.11	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.26	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	0.44	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	0.52	< 0.1	< 0.1

Client Sample ID			GW151	GW156	GW158	GW161
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060203	S24-Ma0060204	S24-Ma0060205	S24-Ma0060206
Date Sampled			Mar 21, 2024	Mar 22, 2024	Mar 22, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.04	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.07	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	0.02	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	105	102	102	106
13C5-PFPeA (surr.)	1	%	105	105	115	106
13C5-PFHxA (surr.)	1	%	107	115	127	122
13C4-PFHpA (surr.)	1	%	101	116	113	113
13C8-PFOA (surr.)	1	%	112	119	119	105
13C5-PFNA (surr.)	1	%	107	109	111	109
13C6-PFDA (surr.)	1	%	119	113	121	112
13C2-PFUnDA (surr.)	1	%	95	96	97	105
13C2-PFDoDA (surr.)	1	%	102	93	86	90
13C2-PFTeDA (surr.)	1	%	91	70	75	80

Client Sample ID			GW151	GW156	GW158	GW161
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060203	S24-Ma0060204	S24-Ma0060205	S24-Ma0060206
Date Sampled			Mar 21, 2024	Mar 22, 2024	Mar 22, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	88	108	103	102
D3-N-MeFOSA (surr.)	1	%	94	100	106	95
D5-N-EtFOSA (surr.)	1	%	104	104	107	102
D7-N-MeFOSE (surr.)	1	%	97	94	105	103
D9-N-EtFOSE (surr.)	1	%	100	90	103	96
D5-N-EtFOSAA (surr.)	1	%	109	105	116	106
D3-N-MeFOSAA (surr.)	1	%	90	100	109	100
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	0.08	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	0.04	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	0.07	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.69	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	0.02	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	0.05	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	108	122	117	109
18O2-PFHxS (surr.)	1	%	104	101	116	104
13C8-PFOS (surr.)	1	%	91	94	111	99
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	102	141	122	97
13C2-6:2 FTSA (surr.)	1	%	95	97	106	100
13C2-8:2 FTSA (surr.)	1	%	98	104	100	94
13C2-10:2 FTSA (surr.)	1	%	91	85	91	90
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.74	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.07	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.76	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	0.96	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	1.09	< 0.1	< 0.1

Client Sample ID			GW162	GW163	DW4B	RW4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060207	S24-Ma0060208	S24-Ma0060209	S24-Ma0060210
Date Sampled			Mar 22, 2024	Mar 21, 2024	Mar 21, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	0.31	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.45	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	2.0	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	0.04	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	105	96	117	94
13C5-PFPeA (surr.)	1	%	108	94	117	107
13C5-PFHxA (surr.)	1	%	118	101	128	116
13C4-PFHpA (surr.)	1	%	122	111	110	113
13C8-PFOA (surr.)	1	%	125	115	124	128
13C5-PFNA (surr.)	1	%	108	111	108	115
13C6-PFDA (surr.)	1	%	115	119	112	115
13C2-PFUnDA (surr.)	1	%	100	96	97	87
13C2-PFDoDA (surr.)	1	%	94	95	106	66
13C2-PFTeDA (surr.)	1	%	80	82	91	39
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	107	89	93	111
D3-N-MeFOSA (surr.)	1	%	102	88	105	100
D5-N-EtFOSA (surr.)	1	%	94	95	103	93
D7-N-MeFOSE (surr.)	1	%	101	101	95	99
D9-N-EtFOSE (surr.)	1	%	97	94	102	86
D5-N-EtFOSAA (surr.)	1	%	105	103	104	111
D3-N-MeFOSAA (surr.)	1	%	101	106	99	105
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	4.8	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	2.2	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW162	GW163	DW4B	RW4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0060207	S24-Ma0060208	S24-Ma0060209	S24-Ma0060210
Date Sampled			Mar 22, 2024	Mar 21, 2024	Mar 21, 2024	Mar 21, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	117	104	108	113
18O2-PFHxS (surr.)	1	%	106	101	103	111
13C8-PFOS (surr.)	1	%	101	104	98	89
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	128	180	118	117
13C2-6:2 FTSA (surr.)	1	%	123	109	101	105
13C2-8:2 FTSA (surr.)	1	%	113	103	97	86
13C2-10:2 FTSA (surr.)	1	%	89	82	98	56
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.04	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.04	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	7.6	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	9.8	< 0.1	< 0.1

Client Sample ID			RW5	BLANK3
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ma0060211	S24-Ma0060212
Date Sampled			Mar 22, 2024	Mar 21, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	91	102
13C5-PFPeA (surr.)	1	%	103	123
13C5-PFHxA (surr.)	1	%	115	128
13C4-PFHpA (surr.)	1	%	106	130
13C8-PFOA (surr.)	1	%	102	156
13C5-PFNA (surr.)	1	%	109	140
13C6-PFDA (surr.)	1	%	111	152
13C2-PFUnDA (surr.)	1	%	84	140

Client Sample ID			RW5	BLANK3
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ma0060211	S24-Ma0060212
Date Sampled			Mar 22, 2024	Mar 21, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
13C2-PFDoDA (surr.)	1	%	78	139
13C2-PFTeDA (surr.)	1	%	70	137
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	99	115
D3-N-MeFOSA (surr.)	1	%	89	107
D5-N-EtFOSA (surr.)	1	%	90	113
D7-N-MeFOSE (surr.)	1	%	94	111
D9-N-EtFOSE (surr.)	1	%	86	107
D5-N-EtFOSAA (surr.)	1	%	96	163
D3-N-MeFOSAA (surr.)	1	%	97	154
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	111	134
18O2-PFHxS (surr.)	1	%	102	137
13C8-PFOS (surr.)	1	%	83	144
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	92	114
13C2-6:2 FTSA (surr.)	1	%	94	101
13C2-8:2 FTSA (surr.)	1	%	99	135
13C2-10:2 FTSA (surr.)	1	%	84	102

Client Sample ID			RW5	BLANK3
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ma0060211	S24-Ma0060212
Date Sampled			Mar 22, 2024	Mar 21, 2024
Test/Reference	LOR	Unit		
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Mar 26, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Mar 26, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Mar 26, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Mar 26, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Mar 25, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Eurofins Environment Testing NZ Ltd
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Auckland	Auckland (Asb)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6282
Report #: 1081382
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Mar 25, 2024 12:55 PM
Due: Apr 3, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	GW119	Mar 21, 2024		Water	S24-Ma0060195	X
2	GW120	Mar 21, 2024		Water	S24-Ma0060196	X
3	GW128	Mar 22, 2024		Water	S24-Ma0060197	X
4	GW131	Mar 21, 2024		Water	S24-Ma0060198	X
5	GW137	Mar 21, 2024		Water	S24-Ma0060199	X
6	GW136	Mar 21, 2024		Water	S24-Ma0060200	X
7	GW142	Mar 21, 2024		Water	S24-Ma0060201	X
8	GW146	Mar 21, 2024		Water	S24-Ma0060202	X
9	GW151	Mar 21, 2024		Water	S24-Ma0060203	X
10	GW156	Mar 22, 2024		Water	S24-Ma0060204	X
11	GW158	Mar 22, 2024		Water	S24-Ma0060205	X
12	GW161	Mar 21, 2024		Water	S24-Ma0060206	X
13	GW162	Mar 22, 2024		Water	S24-Ma0060207	X

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Eurofins Environment Testing Australia Pty Ltd
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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

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NSW 2102

Project Name: RICHMOND
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Order No.: PO6282
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Received: Mar 25, 2024 12:55 PM
Due: Apr 3, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X
14	GW163	Mar 21, 2024		Water	S24-Ma0060208	X
15	DW4B	Mar 21, 2024		Water	S24-Ma0060209	X
16	RW4	Mar 21, 2024		Water	S24-Ma0060210	X
17	RW5	Mar 22, 2024		Water	S24-Ma0060211	X
18	BLANK3	Mar 21, 2024		Water	S24-Ma0060212	X
Test Counts						18

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
PFASs Summations							
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	-			0.01	N/A	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	88			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	100			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	100			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	91			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	90			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	100			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	100			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	106			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	101			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	89			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	84			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	110			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	91			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	92			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	93			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	87			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	94			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	91			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	99			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	71			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	99			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	107			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ma0060197	CP	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ma0060197	CP	%	97			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ma0060197	CP	%	101			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ma0060197	CP	%	89			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ma0060197	CP	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ma0060197	CP	%	100			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ma0060197	CP	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ma0060197	CP	%	94			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ma0060197	CP	%	92			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ma0060197	CP	%	123			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ma0060197	CP	%	96			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ma0060197	CP	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ma0060197	CP	%	89			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ma0060197	CP	%	100			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ma0060197	CP	%	92			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ma0060197	CP	%	106			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ma0060197	CP	%	100			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ma0060197	CP	%	93			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ma0060197	CP	%	98			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0060197	CP	%	100			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ma0060197	CP	%	82			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ma0060197	CP	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ma0060197	CP	%	132			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ma0060197	CP	%	115			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ma0060197	CP	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ma0060197	CP	%	82			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ma0060197	CP	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0060197	CP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ma0060197	CP	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ma0060197	CP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ma0060211	CP	%	88			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ma0060211	CP	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ma0060211	CP	%	104			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ma0060211	CP	%	96			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ma0060211	CP	%	91			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ma0060211	CP	%	93			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ma0060211	CP	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ma0060211	CP	%	96			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ma0060211	CP	%	104			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ma0060211	CP	%	83			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ma0060211	CP	%	94			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ma0060211	CP	%	99			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ma0060211	CP	%	99			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ma0060211	CP	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ma0060211	CP	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ma0060211	CP	%	91			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ma0060211	CP	%	88			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ma0060211	CP	%	95			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ma0060211	CP	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0060211	CP	%	92			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ma0060211	CP	%	89			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ma0060211	CP	%	83			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ma0060211	CP	%	94			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ma0060211	CP	%	100			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ma0060211	CP	%	99			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ma0060211	CP	%	79			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ma0060211	CP	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0060211	CP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ma0060211	CP	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ma0060211	CP	%	118			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0060196	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ma0060196	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ma0060204	CP	ug/L	0.04	0.03	17	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ma0060204	CP	ug/L	0.07	0.07	2.9	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ma0060204	CP	ug/L	0.01	< 0.01	18	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ma0060204	CP	ug/L	0.02	0.02	7.0	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ma0060204	CP	ug/L	0.08	0.08	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ma0060204	CP	ug/L	0.04	0.04	6.0	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ma0060204	CP	ug/L	0.07	0.06	3.4	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ma0060204	CP	ug/L	0.69	0.67	3.3	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ma0060204	CP	ug/L	0.02	0.02	13	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ma0060204	CP	ug/L	0.05	0.05	5.7	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0060204	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ma0060204	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ma0060204	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:

Asim Khan Analytical Services Manager



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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	5 Day
Date/Time received	Mar 25, 2024 12:55 PM
Eurofins reference	1081382

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 : 4.7 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Extra sample "unlabeled" 23010346 is on hold.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page ___ of ___

Project Manager: Jenna Maltman / Joe Unwin
Purchase Order No: PO6282
Contact email: jmaltmn@geo-logix.com.au / junwin@geo-logix.com.au
Quote Reference: 230714GLXN
Project Name: Richmond
Send Invoice to: accounts@geo-logix.com.au
Project Number: 2301034b **Date Submitted:** ___
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify**	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compound		Hold	SUITE
	GW119	21/03/2024		x																							x			
	GW120	21/03/2024		x																							x			
	GW128	22/03/2024		x																							x			
	GW131	21/03/2024		x																							x			
	GW137	21/03/2024		x																							x			
	GW136	21/03/2024		x																							x			
	GW142	21/03/2024		x																							x			
	GW146	21/03/2024		x																							x			
	GW151	21/03/2024		x																							x			
	GW156	22/03/2024		x																							x			
	GW158	22/03/2024		x																							x			
	GW161	21/03/2024		x																							x			
	GW162	22/03/2024		x																							x			
	GW163	22/03/2024		x																							x			
	DW4b	21/03/2024		x																							x			
	RW4	21/03/2024		x																							x			
	RW5	22/03/2024		x																							x			
	BLANK3	21/03/2024		x																							x			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: J V Date/Time: 25/3/24 Signature:
Received by: Date/Time: 25/3/24 4:55pm Signature:
4.7°C

1081382

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1082557-W**
Project name RICHMOND
Project ID 2301034B
Received Date Mar 26, 2024

Client Sample ID			**TW4B**
Sample Matrix			**Water**
Eurofins Sample No.			**S24-Ma0060225**
Date Sampled			**Mar 21, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	80
13C5-PFPeA (surr.)	1	%	111
13C5-PFHxA (surr.)	1	%	114
13C4-PFHpA (surr.)	1	%	113
13C8-PFOA (surr.)	1	%	113
13C5-PFNA (surr.)	1	%	135
13C6-PFDA (surr.)	1	%	97
13C2-PFUnDA (surr.)	1	%	92
13C2-PFDoDA (surr.)	1	%	93
13C2-PFTeDA (surr.)	1	%	81
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	128
D3-N-MeFOSA (surr.)	1	%	76

Client Sample ID			TW4B
Sample Matrix			Water
Eurofins Sample No.			S24-Ma0060225
Date Sampled			Mar 21, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	69
D7-N-MeFOSE (surr.)	1	%	46
D9-N-EtFOSE (surr.)	1	%	50
D5-N-EtFOSAA (surr.)	1	%	72
D3-N-MeFOSAA (surr.)	1	%	82
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	138
18O2-PFHxS (surr.)	1	%	126
13C8-PFOS (surr.)	1	%	123
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	81
13C2-6:2 FTSA (surr.)	1	%	95
13C2-8:2 FTSA (surr.)	1	%	112
13C2-10:2 FTSA (surr.)	1	%	76
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Apr 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Apr 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Apr 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Apr 02, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Mar 28, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Perth
46-48 Banksia Road
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WA 6106
+61 8 6253 4444
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Site# 2370

Eurofins Environment Testing NZ Ltd
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Auckland	Auckland (Asb)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034B

Order No.: PO6283
Report #: 1082557
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Mar 26, 2024 2:48 PM
Due: Apr 4, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	TW4B	Mar 21, 2024		Water	S24-Ma0060225	X
Test Counts						1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	100			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	89			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	82			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	75			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	105			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	113			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	80			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	76			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	105			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	79			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	124			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	99			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	76			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	82			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	81			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	87			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	84			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	78			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	82			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	81			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	67			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	81			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	83			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M24-Ma0069831	NCP	%	103			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ma0069831	NCP	%	89			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ma0069831	NCP	%	90			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ma0069831	NCP	%	81			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ma0069831	NCP	%	82			50-150	Pass	
Perfluorononanoic acid (PFNA)	M24-Ma0069831	NCP	%	75			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ma0069831	NCP	%	106			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ma0069831	NCP	%	110			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ma0069831	NCP	%	74			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ma0069831	NCP	%	50			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ma0069831	NCP	%	95			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M24-Ma0069831	NCP	%	77			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ma0069831	NCP	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ma0069831	NCP	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ma0069831	NCP	%	119			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ma0069831	NCP	%	95			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ma0069831	NCP	%	77			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ma0069831	NCP	%	81			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M24-Ma0069831	NCP	%	88			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ma0069831	NCP	%	87			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ma0069831	NCP	%	84			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ma0069831	NCP	%	80			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ma0069831	NCP	%	77			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ma0069831	NCP	%	84			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ma0069831	NCP	%	79			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ma0069831	NCP	%	64			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ma0069831	NCP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ma0069831	NCP	%	81			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ma0069831	NCP	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ma0069831	NCP	%	78			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ma0065488	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ma0065488	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

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46-48 Banksia Road
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+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Asb)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034B
Turnaround time:	5 Day
Date/Time received	Mar 26, 2024 2:48 PM
Eurofins reference	1082557

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 : 4.7 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 118 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page ___ of ___

Project Manager: Jenna Maltman / Joe Unwin
Contact email: jmaltman@geo-logix.com.au / junwin@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034b **Date Submitted:** ___

Purchase Order No: PO6283
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

#1082557

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compound		Hold	SUITE
	TW4b	21/03/2024		x				Send to Eurofins Melbourne.																				x		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: JV Date/Time: 25/3/24 Signature: _____ Received by: _____ Date/Time: 2:48 pm 26/3/24 Signature: _____

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1063346-S**
Project name RICHMOND
Project ID 2301034C
Received Date Jan 29, 2024

Client Sample ID			GX164/0.4-0.5	GX164/1.4-1.5	GX165/0.4-0.5	GX165/1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046315	S24-Ja0046316	S24-Ja0046317	S24-Ja0046318
Date Sampled			Jan 22, 2024	Jan 22, 2024	Jan 23, 2024	Jan 23, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	19	14	14	8.7
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	100	96	95	97
13C5-PFPeA (surr.)	1	%	110	107	107	107
13C5-PFHxA (surr.)	1	%	109	100	105	105
13C4-PFHpA (surr.)	1	%	106	97	102	109
13C8-PFOA (surr.)	1	%	91	105	101	97
13C5-PFNA (surr.)	1	%	111	93	97	101
13C6-PFDA (surr.)	1	%	100	94	88	111
13C2-PFUnDA (surr.)	1	%	107	121	117	127
13C2-PFDoDA (surr.)	1	%	108	105	108	99
13C2-PFTeDA (surr.)	1	%	88	100	95	99
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	104	100	101	96

Client Sample ID			GX164/0.4-0.5	GX164/1.4-1.5	GX165/0.4-0.5	GX165/1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046315	S24-Ja0046316	S24-Ja0046317	S24-Ja0046318
Date Sampled			Jan 22, 2024	Jan 22, 2024	Jan 23, 2024	Jan 23, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	101	106	110	108
D5-N-EtFOSA (surr.)	1	%	89	108	90	98
D7-N-MeFOSE (surr.)	1	%	101	88	87	86
D9-N-EtFOSE (surr.)	1	%	89	104	97	95
D5-N-EtFOSAA (surr.)	1	%	128	106	125	152
D3-N-MeFOSAA (surr.)	1	%	121	117	121	141
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	107	104	93	105
18O2-PFHxS (surr.)	1	%	99	103	102	102
13C8-PFOS (surr.)	1	%	108	102	103	113
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	123	120	108	93
13C2-6:2 FTSA (surr.)	1	%	79	78	87	90
13C2-8:2 FTSA (surr.)	1	%	93	89	122	137
13C2-10:2 FTSA (surr.)	1	%	190	180	167	INT
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX166/0.4-0.5	GX166/1.4-1.5	GX167/0.4-0.5	GX167/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046319	S24-Ja0046320	S24-Ja0046321	S24-Ja0046322
Date Sampled			Jan 23, 2024	Jan 23, 2024	Jan 24, 2024	Jan 24, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	6.0	7.7	24	17

Client Sample ID			GX166/0.4-0.5	GX166/1.4-1.5	GX167/0.4-0.5	GX167/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046319	S24-Ja0046320	S24-Ja0046321	S24-Ja0046322
Date Sampled			Jan 23, 2024	Jan 23, 2024	Jan 24, 2024	Jan 24, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	100	99	97	90
13C5-PFPeA (surr.)	1	%	105	112	106	105
13C5-PFHxA (surr.)	1	%	112	110	103	93
13C4-PFHpA (surr.)	1	%	96	96	106	91
13C8-PFOA (surr.)	1	%	101	99	101	91
13C5-PFNA (surr.)	1	%	109	101	94	98
13C6-PFDA (surr.)	1	%	122	101	96	90
13C2-PFUnDA (surr.)	1	%	126	103	123	106
13C2-PFDoDA (surr.)	1	%	105	100	101	101
13C2-PFTeDA (surr.)	1	%	100	104	98	103
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	107	102	97	92
D3-N-MeFOSA (surr.)	1	%	102	100	87	96
D5-N-EtFOSA (surr.)	1	%	104	110	107	110
D7-N-MeFOSE (surr.)	1	%	97	98	101	102
D9-N-EtFOSE (surr.)	1	%	96	98	99	94
D5-N-EtFOSAA (surr.)	1	%	118	81	130	117
D3-N-MeFOSAA (surr.)	1	%	114	102	112	104
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	104	102	99	100

Client Sample ID			GX166/0.4-0.5	GX166/1.4-1.5	GX167/0.4-0.5	GX167/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046319	S24-Ja0046320	S24-Ja0046321	S24-Ja0046322
Date Sampled			Jan 23, 2024	Jan 23, 2024	Jan 24, 2024	Jan 24, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
18O2-PFHxS (surr.)	1	%	107	102	104	98
13C8-PFOS (surr.)	1	%	102	106	117	102
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	173	117	82	91
13C2-6:2 FTSA (surr.)	1	%	83	102	95	82
13C2-8:2 FTSA (surr.)	1	%	107	93	103	117
13C2-10:2 FTSA (surr.)	1	%	189	147	184	160
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX168/0.4-0.5	GX168/1.4-1.5	GX169/0.4-0.5	GX169/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046323	S24-Ja0046324	S24-Ja0046325	S24-Ja0046326
Date Sampled			Jan 24, 2024	Jan 24, 2024	Jan 24, 2024	Jan 24, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	18	14	20	17
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	96	92	91	87
13C5-PFPeA (surr.)	1	%	105	104	110	97
13C5-PFHxA (surr.)	1	%	102	89	105	84
13C4-PFHpA (surr.)	1	%	109	102	93	91
13C8-PFOA (surr.)	1	%	95	87	89	97
13C5-PFNA (surr.)	1	%	97	101	97	90
13C6-PFDA (surr.)	1	%	107	98	101	96
13C2-PFUnDA (surr.)	1	%	109	116	111	104

Client Sample ID			GX168/0.4-0.5	GX168/1.4-1.5	GX169/0.4-0.5	GX169/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ja0046323	S24-Ja0046324	S24-Ja0046325	S24-Ja0046326
Date Sampled			Jan 24, 2024	Jan 24, 2024	Jan 24, 2024	Jan 24, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C2-PFDoDA (surr.)	1	%	100	104	97	102
13C2-PFTeDA (surr.)	1	%	101	98	97	109
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	111	106	102	91
D3-N-MeFOSA (surr.)	1	%	94	98	105	105
D5-N-EtFOSA (surr.)	1	%	81	98	97	103
D7-N-MeFOSE (surr.)	1	%	94	88	100	89
D9-N-EtFOSE (surr.)	1	%	93	86	89	94
D5-N-EtFOSAA (surr.)	1	%	109	134	110	87
D3-N-MeFOSAA (surr.)	1	%	120	115	100	81
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	112	95	108	101
18O2-PFHxS (surr.)	1	%	100	94	112	98
13C8-PFOS (surr.)	1	%	113	96	97	96
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	118	137	108	85
13C2-6:2 FTSA (surr.)	1	%	108	98	91	74
13C2-8:2 FTSA (surr.)	1	%	108	88	94	108
13C2-10:2 FTSA (surr.)	1	%	150	174	157	157
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX169/2.9-3.0
Sample Matrix			**Soil**
Eurofins Sample No.			**S24-Ja0046327**
Date Sampled			**Jan 24, 2024**
Test/Reference	LOR	Unit	
Sample Properties			
% Moisture	1	%	15
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	85
13C5-PFPeA (surr.)	1	%	99
13C5-PFHxA (surr.)	1	%	88
13C4-PFHpA (surr.)	1	%	93
13C8-PFOA (surr.)	1	%	81
13C5-PFNA (surr.)	1	%	96
13C6-PFDA (surr.)	1	%	95
13C2-PFUnDA (surr.)	1	%	104
13C2-PFDoDA (surr.)	1	%	101
13C2-PFTeDA (surr.)	1	%	97
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	98
D3-N-MeFOSA (surr.)	1	%	92
D5-N-EtFOSA (surr.)	1	%	96
D7-N-MeFOSE (surr.)	1	%	96
D9-N-EtFOSE (surr.)	1	%	89
D5-N-EtFOSAA (surr.)	1	%	76
D3-N-MeFOSAA (surr.)	1	%	76
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5

Client Sample ID			GX169/2.9-3.0
Sample Matrix			**Soil**
Eurofins Sample No.			**S24-Ja0046327**
Date Sampled			**Jan 24, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	97
18O2-PFHxS (surr.)	1	%	94
13C8-PFOS (surr.)	1	%	92
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	83
13C2-6:2 FTSA (surr.)	1	%	71
13C2-8:2 FTSA (surr.)	1	%	71
13C2-10:2 FTSA (surr.)	1	%	148
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Jan 29, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Jan 29, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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ABN: 50 005 085 521

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6210
Report #: 1063346
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:57 PM
Due: Feb 2, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX164/0.4-0.5	Jan 22, 2024		Soil	S24-Ja0046315		X	X
2	GX164/1.4-1.5	Jan 22, 2024		Soil	S24-Ja0046316		X	X
3	GX165/0.4-0.5	Jan 23, 2024		Soil	S24-Ja0046317		X	X
4	GX165/1.5-1.6	Jan 23, 2024		Soil	S24-Ja0046318		X	X
5	GX166/0.4-0.5	Jan 23, 2024		Soil	S24-Ja0046319		X	X
6	GX166/1.4-1.5	Jan 23, 2024		Soil	S24-Ja0046320		X	X
7	GX167/0.4-0.5	Jan 24, 2024		Soil	S24-Ja0046321		X	X
8	GX167/1.4-1.5	Jan 24, 2024		Soil	S24-Ja0046322		X	X
9	GX168/0.4-0.5	Jan 24, 2024		Soil	S24-Ja0046323		X	X
10	GX168/1.4-1.5	Jan 24, 2024		Soil	S24-Ja0046324		X	X
11	GX169/0.4-0.5	Jan 24, 2024		Soil	S24-Ja0046325		X	X
12	GX169/1.4-1.5	Jan 24, 2024		Soil	S24-Ja0046326		X	X
13	GX169/2.9-3.0	Jan 24, 2024		Soil	S24-Ja0046327		X	X

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Eurofins Environment Testing Australia Pty Ltd
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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Eurofins Environment Testing NZ Ltd
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6210
Report #: 1063346
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:57 PM
Due: Feb 2, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	R1	Jan 24, 2024		Water	S24-Ja0046328			X
15	BLANK1	Jan 22, 2024		Water	S24-Ja0046329			X
16	GX164/2.9-3.0	Jan 22, 2024		Soil	S24-Ja0046330	X		
17	GX165/1.0-1.1	Jan 23, 2024		Soil	S24-Ja0046331	X		
18	GX165/2.9-3.0	Jan 23, 2024		Soil	S24-Ja0046332	X		
19	GX166/2.9-3.0	Jan 23, 2024		Soil	S24-Ja0046333	X		
20	GX167/2.9-3.0	Jan 24, 2024		Soil	S24-Ja0046334	X		
21	GX168/2.9-3.0	Jan 24, 2024		Soil	S24-Ja0046335	X		
Test Counts						6	13	15

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	113			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	88			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	106			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	115			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	103			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	112			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	122			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	133			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	103			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	112			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	106			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	102			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	104			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	94			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	91			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	96			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	102			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	106			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	93			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	91			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	118			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	139			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	92			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ja0046321	CP	%	89			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046321	CP	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046321	CP	%	106			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046321	CP	%	108			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046321	CP	%	108			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046321	CP	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046321	CP	%	117			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046321	CP	%	95			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046321	CP	%	96			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046321	CP	%	101			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046321	CP	%	114			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046321	CP	%	93			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046321	CP	%	88			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046321	CP	%	99			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046321	CP	%	106			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046321	CP	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046321	CP	%	112			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046321	CP	%	92			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046321	CP	%	97			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046321	CP	%	102			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046321	CP	%	90			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046321	CP	%	85			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046321	CP	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046321	CP	%	110			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046321	CP	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046321	CP	%	92			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046321	CP	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046321	CP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046321	CP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046321	CP	%	79			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046320	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046320	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046320	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046320	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan Analytical Services Manager



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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Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1063346-W**
Project name RICHMOND
Project ID 2301034C
Received Date Jan 29, 2024

Client Sample ID			**R1**	**BLANK1**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S24-Ja0046328**	**S24-Ja0046329**
Date Sampled			**Jan 24, 2024**	**Jan 22, 2024**
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	109	98
13C5-PFPeA (surr.)	1	%	123	113
13C5-PFHxA (surr.)	1	%	130	103
13C4-PFHpA (surr.)	1	%	123	97
13C8-PFOA (surr.)	1	%	123	90
13C5-PFNA (surr.)	1	%	127	90
13C6-PFDA (surr.)	1	%	106	82
13C2-PFUnDA (surr.)	1	%	106	83
13C2-PFDoDA (surr.)	1	%	98	70
13C2-PFTeDA (surr.)	1	%	64	52
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	93	92
D3-N-MeFOSA (surr.)	1	%	62	73
D5-N-EtFOSA (surr.)	1	%	53	71

Client Sample ID			R1	BLANK1
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ja0046328	S24-Ja0046329
Date Sampled			Jan 24, 2024	Jan 22, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D7-N-MeFOSE (surr.)	1	%	64	74
D9-N-EtFOSE (surr.)	1	%	55	70
D5-N-EtFOSAA (surr.)	1	%	111	84
D3-N-MeFOSAA (surr.)	1	%	112	84
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	113	92
18O2-PFHxS (surr.)	1	%	119	93
13C8-PFOS (surr.)	1	%	121	88
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	137	119
13C2-6:2 FTSA (surr.)	1	%	111	93
13C2-8:2 FTSA (surr.)	1	%	111	86
13C2-10:2 FTSA (surr.)	1	%	88	72
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Jan 29, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6210
Report #: 1063346
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Jan 29, 2024 5:57 PM
Due: Feb 2, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX164/0.4-0.5	Jan 22, 2024		Soil	S24-Ja0046315		X	X
2	GX164/1.4-1.5	Jan 22, 2024		Soil	S24-Ja0046316		X	X
3	GX165/0.4-0.5	Jan 23, 2024		Soil	S24-Ja0046317		X	X
4	GX165/1.5-1.6	Jan 23, 2024		Soil	S24-Ja0046318		X	X
5	GX166/0.4-0.5	Jan 23, 2024		Soil	S24-Ja0046319		X	X
6	GX166/1.4-1.5	Jan 23, 2024		Soil	S24-Ja0046320		X	X
7	GX167/0.4-0.5	Jan 24, 2024		Soil	S24-Ja0046321		X	X
8	GX167/1.4-1.5	Jan 24, 2024		Soil	S24-Ja0046322		X	X
9	GX168/0.4-0.5	Jan 24, 2024		Soil	S24-Ja0046323		X	X
10	GX168/1.4-1.5	Jan 24, 2024		Soil	S24-Ja0046324		X	X
11	GX169/0.4-0.5	Jan 24, 2024		Soil	S24-Ja0046325		X	X
12	GX169/1.4-1.5	Jan 24, 2024		Soil	S24-Ja0046326		X	X
13	GX169/2.9-3.0	Jan 24, 2024		Soil	S24-Ja0046327		X	X

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Project ID: 2301034C

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Received: Jan 29, 2024 5:57 PM
Due: Feb 2, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	R1	Jan 24, 2024		Water	S24-Ja0046328			X
15	BLANK1	Jan 22, 2024		Water	S24-Ja0046329			X
16	GX164/2.9-3.0	Jan 22, 2024		Soil	S24-Ja0046330	X		
17	GX165/1.0-1.1	Jan 23, 2024		Soil	S24-Ja0046331	X		
18	GX165/2.9-3.0	Jan 23, 2024		Soil	S24-Ja0046332	X		
19	GX166/2.9-3.0	Jan 23, 2024		Soil	S24-Ja0046333	X		
20	GX167/2.9-3.0	Jan 24, 2024		Soil	S24-Ja0046334	X		
21	GX168/2.9-3.0	Jan 24, 2024		Soil	S24-Ja0046335	X		
Test Counts						6	13	15

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
PFASs Summations							
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	-			0.01	N/A	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	95			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	108			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	102			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	84			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	100			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	95			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	99			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	101			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	90			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	105			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	86			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	98			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	111			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	97			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
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ja0046255	NCP	%	93			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046255	NCP	%	98			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046255	NCP	%	87			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046255	NCP	%	89			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046255	NCP	%	107			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046255	NCP	%	92			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046255	NCP	%	96			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046255	NCP	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046255	NCP	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046255	NCP	%	117			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046255	NCP	%	91			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046255	NCP	%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046255	NCP	%	89			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046255	NCP	%	104			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046255	NCP	%	88			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046255	NCP	%	103			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046255	NCP	%	101			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046255	NCP	%	95			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046255	NCP	%	85			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046255	NCP	%	89			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046255	NCP	%	84			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046255	NCP	%	105			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046255	NCP	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046255	NCP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046255	NCP	%	65			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046255	NCP	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046255	NCP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046255	NCP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046255	NCP	%	89			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ja0046265	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Asim Khan Analytical Services Manager



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.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Jan 29, 2024 5:57 PM
Eurofins reference	1063346

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 : 11.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Purchase Order No: PO6210

Contact email: jmaltman@geo-logix.com.au
Quote Reference:

Project Name: Richmond
Send Invoice to: accounts@geo-logix.com.au

Project Number: 230103AC Date Submitted: 25/01/2024
TAT required: Std

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
	GX164/0.4-0.5	22/01/2024	X																									X		
	GX164/1.4-1.5	22/01/2024	X																									X		
	GX164/2.9-3.0	22/01/2024	X																										X	
	GX165/0.4-0.5	23/01/2024	X																									X		
	GX165/1.0-1.1	23/01/2024	X																										X	
	GX165/1.5-1.6	23/01/2024	X																									X		
	GX165/2.9-3.0	23/01/2024	X																										X	
	GX166/0.4-0.5	23/01/2024	X																									X		
	GX166/1.4-1.5	23/01/2024	X																									X		
	GX166/2.9-3.0	23/01/2024	X																										X	
	GX167/0.4-0.5	24/01/2024	X																									X		
	GX167/1.4-1.5	24/01/2024	X																									X		
	GX167/2.9-3.0	24/01/2024	X																										X	
	GX168/0.4-0.5	24/01/2024	X																									X		
	GX168/1.4-1.5	24/01/2024	X																									X		
	GX168/2.9-3.0	24/01/2024	X																										X	
	GX169/0.4-0.5	24/01/2024	X																									X		
	GX169/1.4-1.5	24/01/2024	X																									X		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature:

Received by: Brandon Lusty Date/Time: 25/1/24 9:57 Signature:

11.1

1063346

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Warriewood, NSW 2102
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P: (02) 9979 1722
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CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034b
Date Submitted: 25/01/2024

Purchase Order No: P06210
Quote Reference:
Send Invoice to: accounts@geo-logix.com.au
TAT required: Std

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify**	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 Compound		Hold	SUITE
	GX169/2.9-3.0	24/01/2024	X																									X		
	R1	24/01/2024		X																								X		
	BLANK1	22/01/2024		X																								X		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	$Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3$
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	$TDS/SO_4/CH_4$/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 25/1/24 Signature:
Received by: M. Thwin Date/Time: Signature:

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1065390-S-V2**
Project name RICHMOND
Project ID 2301034C
Received Date Feb 02, 2024

Client Sample ID			**TS1C**
Sample Matrix			**Soil**
Eurofins Sample No.			**S24-Fe0009199**
Date Sampled			**Jan 29, 2024**
Test/Reference	LOR	Unit	
Sample Properties			
% Moisture	1	%	12
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	107
13C5-PFPeA (surr.)	1	%	124
13C5-PFHxA (surr.)	1	%	129
13C4-PFHpA (surr.)	1	%	127
13C8-PFOA (surr.)	1	%	122
13C5-PFNA (surr.)	1	%	113
13C6-PFDA (surr.)	1	%	109
13C2-PFUnDA (surr.)	1	%	116
13C2-PFDoDA (surr.)	1	%	123
13C2-PFTeDA (surr.)	1	%	97
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	120

Client Sample ID			TS1C
Sample Matrix			Soil
Eurofins Sample No.			S24-Fe0009199
Date Sampled			Jan 29, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D3-N-MeFOSA (surr.)	1	%	84
D5-N-EtFOSA (surr.)	1	%	110
D7-N-MeFOSE (surr.)	1	%	114
D9-N-EtFOSE (surr.)	1	%	109
D5-N-EtFOSAA (surr.)	1	%	34
D3-N-MeFOSAA (surr.)	1	%	25
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	140
18O2-PFHxS (surr.)	1	%	127
13C8-PFOS (surr.)	1	%	133
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	81
13C2-6:2 FTSA (surr.)	1	%	72
13C2-8:2 FTSA (surr.)	1	%	69
13C2-10:2 FTSA (surr.)	1	%	68
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Feb 05, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Feb 07, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Feb 07, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Feb 07, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Feb 07, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Feb 05, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06232
Report #: 1065390
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 2, 2024 4:50 PM
Due: Feb 9, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254							X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	TS1C	Jan 29, 2024		Soil	S24-Fe0009199		X	X
2	TS2C	Feb 01, 2024		Soil	S24-Fe0009200	X		
Test Counts						1	1	1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	84			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	71			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	100			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	103			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	101			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	123			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	101			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	105			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	88			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	89			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	94			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	97			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	92			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	79			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	96			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	76			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	88			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	72			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	81			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	90			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	91			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	82			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	81			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M24-Fe0005705	NCP	%	91			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Fe0005705	NCP	%	70			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Fe0005705	NCP	%	104			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Fe0005705	NCP	%	91			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M24-Fe0005705	NCP	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	M24-Fe0005705	NCP	%	110			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M24-Fe0005705	NCP	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Fe0005705	NCP	%	128			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Fe0005705	NCP	%	107			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Fe0005705	NCP	%	122			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Fe0005705	NCP	%	95			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M24-Fe0005705	NCP	%	98			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Fe0005705	NCP	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Fe0005705	NCP	%	104			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Fe0005705	NCP	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Fe0005705	NCP	%	101			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Fe0005705	NCP	%	91			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Fe0005705	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M24-Fe0005705	NCP	%	80			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Fe0005705	NCP	%	96			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Fe0005705	NCP	%	77			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Fe0005705	NCP	%	76			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Fe0005705	NCP	%	96			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Fe0005705	NCP	%	90			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Fe0005705	NCP	%	94			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Fe0005705	NCP	%	97			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Fe0005705	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Fe0005705	NCP	%	95			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Fe0005705	NCP	%	88			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Fe0005705	NCP	%	92			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	B24-Fe0011460	NCP	%	15	13	16	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Fe0005707	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Fe0005707	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Fe0005707	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Fe0005707	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

This report has been revised (V2) to amend the sampling date for S24-Fe0009199 from 01/02/2024 to 29/01/2024 as per client request.

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:

Asim Khan	Analytical Services Manager
Joseph Edouard	Senior Analyst-PFAS
Mary Makarios	Senior Analyst-Sample Properties



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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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Geo-Logix P/L
Contact name: Jenna Maltman
Project name: RICHMOND
Project ID: 2301034C
Turnaround time: 5 Day
Date/Time received Feb 2, 2024 4:50 PM
Eurofins reference 1065390

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 : 9.3 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:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 230103-4C Date Submitted: 2/2/24

Page ___ of ___
Purchase Order No: PO6232
Quote Reference:
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS 30 Compounds	Hold	SUITE
	TS1C		✓					Send to	X		
	TS2C		✓					Eurofins Melbourne	X	X	

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: JV Date/Time: 2/2/24 Signature:
Received by: Date/Time: 2/2/24 Signature:
9.3 2:50

Version: V1
Date Issued: April 2019
Review Date: April 2021

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 11 June 2024 4:16 PM
To: EnviroSampleNSW@eurofins.com
Cc: AsimKhan@eurofins.com
Subject: 1065390-S amedment

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

Do not click on links or open attachments unless you recognise the sender and are certain that the content is safe.

Hi Asim,

Could please get the following sample dates corrected for Report #1065390-S:

GX Reference	Eurofins Reference	Date
TS1C	**S24-Fe0009199**	29/01/2024

Kind Regards,

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au



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Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
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Attention: **Jenna Maltman**

Report **1065548-S-V2**
Project name RICHMOND
Project ID 2301034C
Received Date Feb 02, 2024

Client Sample ID			GX162/0.4-0.5	GX162/1.4-1.5	GX172/0.4-0.5	GX172/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011040	S24-Fe0011041	S24-Fe0011042	S24-Fe0011043
Date Sampled			Jan 30, 2024	Jan 30, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	16	15	12	10.0
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	90	88	88	91
13C5-PFPeA (surr.)	1	%	94	98	96	95
13C5-PFHxA (surr.)	1	%	106	108	96	100
13C4-PFHpA (surr.)	1	%	91	83	105	93
13C8-PFOA (surr.)	1	%	91	98	109	98
13C5-PFNA (surr.)	1	%	100	102	91	107
13C6-PFDA (surr.)	1	%	104	102	108	106
13C2-PFUnDA (surr.)	1	%	121	117	114	99
13C2-PFDoDA (surr.)	1	%	116	104	106	110
13C2-PFTeDA (surr.)	1	%	134	107	145	130
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	98	103	103	95

Client Sample ID			GX162/0.4-0.5	GX162/1.4-1.5	GX172/0.4-0.5	GX172/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011040	S24-Fe0011041	S24-Fe0011042	S24-Fe0011043
Date Sampled			Jan 30, 2024	Jan 30, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D3-N-MeFOSA (surr.)	1	%	113	116	100	112
D5-N-EtFOSA (surr.)	1	%	123	130	128	130
D7-N-MeFOSE (surr.)	1	%	107	110	110	121
D9-N-EtFOSE (surr.)	1	%	109	111	102	101
D5-N-EtFOSAA (surr.)	1	%	123	102	126	120
D3-N-MeFOSAA (surr.)	1	%	128	121	132	121
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	113	95	104	105
18O2-PFHxS (surr.)	1	%	124	109	110	112
13C8-PFOS (surr.)	1	%	127	111	110	113
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	88	120	105	93
13C2-6:2 FTSA (surr.)	1	%	91	85	110	102
13C2-8:2 FTSA (surr.)	1	%	123	121	140	137
13C2-10:2 FTSA (surr.)	1	%	128	120	135	118
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX176/0.4-0.5	GX176/1.4-1.5	DS1C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011044	S24-Fe0011045	S24-Fe0011046
Date Sampled			Jan 29, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit			
Sample Properties					
% Moisture	1	%	38	16	12

Client Sample ID			GX176/0.4-0.5	GX176/1.4-1.5	DS1C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011044	S24-Fe0011045	S24-Fe0011046
Date Sampled			Jan 29, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	89	89	91
13C5-PFPeA (surr.)	1	%	90	95	96
13C5-PFHxA (surr.)	1	%	91	95	104
13C4-PFHpA (surr.)	1	%	98	92	95
13C8-PFOA (surr.)	1	%	97	91	95
13C5-PFNA (surr.)	1	%	97	107	102
13C6-PFDA (surr.)	1	%	113	100	115
13C2-PFUnDA (surr.)	1	%	104	121	114
13C2-PFDoDA (surr.)	1	%	118	96	119
13C2-PFTeDA (surr.)	1	%	134	130	125
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	101	117	105
D3-N-MeFOSA (surr.)	1	%	102	114	109
D5-N-EtFOSA (surr.)	1	%	116	124	117
D7-N-MeFOSE (surr.)	1	%	93	112	113
D9-N-EtFOSE (surr.)	1	%	98	116	108
D5-N-EtFOSAA (surr.)	1	%	120	114	137
D3-N-MeFOSAA (surr.)	1	%	96	115	109
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	99	97	107

Client Sample ID			GX176/0.4-0.5	GX176/1.4-1.5	DS1C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Fe0011044	S24-Fe0011045	S24-Fe0011046
Date Sampled			Jan 29, 2024	Jan 29, 2024	Jan 29, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl sulfonic acids (PFSAs)					
18O2-PFHxS (surr.)	1	%	104	100	108
13C8-PFOS (surr.)	1	%	111	107	115
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	81	115	97
13C2-6:2 FTSA (surr.)	1	%	76	93	118
13C2-8:2 FTSA (surr.)	1	%	92	100	102
13C2-10:2 FTSA (surr.)	1	%	179	154	160
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Feb 06, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 08, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Feb 06, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06231
Report #: 1065548
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 2, 2024 5:40 PM
Due: Feb 9, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX162/0.4-0.5	Jan 30, 2024		Soil	S24-Fe0011040		X	X
2	GX162/1.4-1.5	Jan 30, 2024		Soil	S24-Fe0011041		X	X
3	GX172/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011042		X	X
4	GX172/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011043		X	X
5	GX176/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011044		X	X
6	GX176/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011045		X	X
7	DS1C	Jan 29, 2024		Soil	S24-Fe0011046		X	X
8	BLANK	Jan 30, 2024		Water	S24-Fe0011047			X
9	R2	Jan 29, 2024		Water	S24-Fe0011048			X
10	R3	Jan 29, 2024		Water	S24-Fe0011049			X
11	R4	Jan 30, 2024		Water	S24-Fe0011050			X
12	GX162/2.9-3.0	Jan 30, 2024		Soil	S24-Fe0011051	X		
13	GX170/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011052	X		

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Eurofins Environment Testing Australia Pty Ltd
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Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06231
Report #: 1065548
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 2, 2024 5:40 PM
Due: Feb 9, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	GX172/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011053	X		
15	GX176/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011054	X		
16	DS2C	Jan 30, 2024		Soil	S24-Fe0011055	X		
Test Counts						5	7	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
PFASs Summations							
Sum of US EPA PFAS (PFOS + PFOA)*	ug/kg	-			5	N/A	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	103			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	111			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	110			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	104			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	108			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	115			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	109			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	%	101			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	113			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	110			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	112			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	109			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	110			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	114			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	105			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	102			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	108			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	103			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	106			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	123			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Fe0011040	CP	%	103			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0011040	CP	%	110			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0011040	CP	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0011040	CP	%	119			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0011040	CP	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0011040	CP	%	122			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0011040	CP	%	127			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0011040	CP	%	119			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0011040	CP	%	114			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0011040	CP	%	104			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0011040	CP	%	118			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	R24-Fe0007770	NCP	%	114			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	R24-Fe0007770	NCP	%	78			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	R24-Fe0007770	NCP	%	121			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	R24-Fe0007770	NCP	%	119			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	R24-Fe0007770	NCP	%	101			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	R24-Fe0007770	NCP	%	85			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	R24-Fe0007770	NCP	%	96			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	R24-Fe0007770	NCP	%	102			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	R24-Fe0007770	NCP	%	101			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	R24-Fe0007770	NCP	%	104			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	R24-Fe0007770	NCP	%	95			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	R24-Fe0007770	NCP	%	99			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	R24-Fe0007770	NCP	%	95			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	R24-Fe0007770	NCP	%	52			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	R24-Fe0007770	NCP	%	99			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	R24-Fe0007770	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	R24-Fe0007770	NCP	%	69			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	R24-Fe0007770	NCP	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	R24-Fe0007770	NCP	%	86			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Fe0010975	NCP	%	9.1	9.2	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Fe0011043	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Fe0011043	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Fe0011043	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

This report has been revised (V2) to correct the sampling date for samples S24-Fe0011048 and S24-Fe0011049 from Jan 30, 2024 to Jan 29, 2024 as per client request.

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:

Asim Khan	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Sample Properties



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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NSW 2102

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Attention: **Jenna Maltman**

Report **1065548-W-V2**
Project name RICHMOND
Project ID 2301034C
Received Date Feb 02, 2024

Client Sample ID			**BLANK**	**R2**	**R3**	**R4**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S24-Fe0011047**	**S24-Fe0011048**	**S24-Fe0011049**	**S24-Fe0011050**
Date Sampled			**Jan 30, 2024**	**Jan 29, 2024**	**Jan 29, 2024**	**Jan 30, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	99	92	99	97
13C5-PFPeA (surr.)	1	%	106	107	105	105
13C5-PFHxA (surr.)	1	%	110	103	108	103
13C4-PFHpA (surr.)	1	%	99	94	107	99
13C8-PFOA (surr.)	1	%	115	111	109	108
13C5-PFNA (surr.)	1	%	94	91	101	88
13C6-PFDA (surr.)	1	%	93	78	89	76
13C2-PFUnDA (surr.)	1	%	83	64	74	62
13C2-PFDoDA (surr.)	1	%	68	50	60	46
13C2-PFTeDA (surr.)	1	%	29	25	30	28
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	104	105	98	94
D3-N-MeFOSA (surr.)	1	%	95	90	85	68
D5-N-EtFOSA (surr.)	1	%	93	104	68	69

Client Sample ID			BLANK	R2	R3	R4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Fe0011047	S24-Fe0011048	S24-Fe0011049	S24-Fe0011050
Date Sampled			Jan 30, 2024	Jan 29, 2024	Jan 29, 2024	Jan 30, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D7-N-MeFOSE (surr.)	1	%	93	99	82	89
D9-N-EtFOSE (surr.)	1	%	99	103	85	86
D5-N-EtFOSAA (surr.)	1	%	90	73	80	69
D3-N-MeFOSAA (surr.)	1	%	87	78	86	80
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	109	107	109	105
18O2-PFHxS (surr.)	1	%	109	102	114	107
13C8-PFOS (surr.)	1	%	99	77	95	77
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	113	101	108	106
13C2-6:2 FTSA (surr.)	1	%	115	95	109	111
13C2-8:2 FTSA (surr.)	1	%	97	95	96	91
13C2-10:2 FTSA (surr.)	1	%	78	62	58	57
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Feb 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Feb 06, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06231
Report #: 1065548
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 2, 2024 5:40 PM
Due: Feb 9, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	GX162/0.4-0.5	Jan 30, 2024		Soil	S24-Fe0011040		X	X
2	GX162/1.4-1.5	Jan 30, 2024		Soil	S24-Fe0011041		X	X
3	GX172/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011042		X	X
4	GX172/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011043		X	X
5	GX176/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011044		X	X
6	GX176/1.4-1.5	Jan 29, 2024		Soil	S24-Fe0011045		X	X
7	DS1C	Jan 29, 2024		Soil	S24-Fe0011046		X	X
8	BLANK	Jan 30, 2024		Water	S24-Fe0011047			X
9	R2	Jan 29, 2024		Water	S24-Fe0011048			X
10	R3	Jan 29, 2024		Water	S24-Fe0011049			X
11	R4	Jan 30, 2024		Water	S24-Fe0011050			X
12	GX162/2.9-3.0	Jan 30, 2024		Soil	S24-Fe0011051	X		
13	GX170/0.4-0.5	Jan 29, 2024		Soil	S24-Fe0011052	X		

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

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Received: Feb 2, 2024 5:40 PM
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Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						HOLD	Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
14	GX172/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011053	X		
15	GX176/2.9-3.0	Jan 29, 2024		Soil	S24-Fe0011054	X		
16	DS2C	Jan 30, 2024		Soil	S24-Fe0011055	X		
Test Counts						5	7	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	99			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	103			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	95			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	107			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	132			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	100			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	133			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	125			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	103			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	96			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	83			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	109			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	100			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	96			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	101			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	76			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	120			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	73			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	95			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	150			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	105			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	91			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	109			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	120			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Fe0010016	NCP	%	104			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0010016	NCP	%	112			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0010016	NCP	%	109			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0010016	NCP	%	113			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0010016	NCP	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0010016	NCP	%	115			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0010016	NCP	%	112			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0010016	NCP	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0010016	NCP	%	97			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0010016	NCP	%	103			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0010016	NCP	%	106			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Fe0010016	NCP	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Fe0010016	NCP	%	88			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Fe0010016	NCP	%	102			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Fe0010016	NCP	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Fe0010016	NCP	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Fe0010016	NCP	%	88			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Fe0010016	NCP	%	113			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Fe0010016	NCP	%	114			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Fe0010016	NCP	%	86			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Fe0010016	NCP	%	104			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Fe0010016	NCP	%	102			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Fe0010016	NCP	%	98			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Fe0010016	NCP	%	126			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Fe0010016	NCP	%	102			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Fe0010016	NCP	%	78			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Fe0010016	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Fe0010016	NCP	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Fe0010016	NCP	%	138			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Fe0010016	NCP	%	89			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Fe0010024	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) to correct the sampling date for samples S24-Fe0011048 and S24-Fe0011049 from Jan 30, 2024 to Jan 29, 2024 as per client request.

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:

Asim Khan Analytical Services Manager



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

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Feb 2, 2024 5:40 PM
Eurofins reference	1065548

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 : 4.3 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034C
Date Submitted: 2/2/24

Page ___ of ___
Purchase Order No: PO6231
Quote Reference:
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS 30 Compounds	Hold	SUITE
	GX162/0.4-0.5	30/1/24	✓						X		
	GX162/1.4-1.5	↓	✓						X		
	GX162/2.9-3.0	↓	✓							X	
	GX170/0.4-0.5	29/1/24	✓							X	
	GX172/0.4-0.5	↓	✓						X		
	GX172/1.4-1.5		✓						X		
	GX172/2.9-3.0		✓							X	
	GX176/0.4-0.5		✓						X		
	GX176/1.4-1.5		✓						X		
	GX176/2.9-3.0	↓	✓							X	
	DS1C	29/1/24	✓						X		
	DS2C	30/1/24	✓							X	
	BLANK			✓					X		
	R2			✓					X		
	R3			✓					X		
	R4			✓					X		

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: JV Date/Time: 2/2/24 Signature:
Received by: Date/Time: 2/2/24 Signature:
4.7 15:40

10655548

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 4 June 2024 4:08 PM
To: EnviroSampleNSW@eurofins.com
Cc: Asim Khan
Subject: 1065548-W sample date amendments

CAUTION: EXTERNAL EMAIL - Sent from an email domain that is not formally trusted by Eurofins.

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Hi Asim,

Could please get the following sample dates corrected for Report #1065548-W:

GX Reference	Eurofins Reference	Date
R2	**S24-Fe0011048**	29/01/2024
R3	**S24-Fe0011049**	29/01/2024

Kind Regards,

Jenna Maltman | Project Scientist
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au



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NSW 2102

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Attention: **Jenna Maltman**

Report **1073963-S-V3**
Project name RICHMOND
Project ID 2301034C
Received Date Feb 29, 2024

Client Sample ID			**GX170/0.4-0.5**	**GX170/.4-1.5**	**GX173/0.4-0.5**	**GX173/1.4-1.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S24-Ma0000742**	**S24-Ma0000743**	**S24-Ma0000744**	**S24-Ma0000745**
Date Sampled			**Feb 27, 2024**	**Feb 27, 2024**	**Feb 26, 2024**	**Feb 26, 2024**
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	23	18	9.2	9.8
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	103	105	107	107
13C5-PFPeA (surr.)	1	%	112	123	118	122
13C5-PFHxA (surr.)	1	%	115	117	118	120
13C4-PFHpA (surr.)	1	%	120	105	109	118
13C8-PFOA (surr.)	1	%	113	112	115	116
13C5-PFNA (surr.)	1	%	101	113	103	115
13C6-PFDA (surr.)	1	%	102	136	126	133
13C2-PFUnDA (surr.)	1	%	122	116	115	117
13C2-PFDoDA (surr.)	1	%	119	127	125	115
13C2-PFTeDA (surr.)	1	%	131	121	134	115
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			GX170/0.4-0.5	GX170/.4-1.5	GX173/0.4-0.5	GX173/1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ma0000742	S24-Ma0000743	S24-Ma0000744	S24-Ma0000745
Date Sampled			Feb 27, 2024	Feb 27, 2024	Feb 26, 2024	Feb 26, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	97	97	96	104
D3-N-MeFOSA (surr.)	1	%	110	114	107	114
D5-N-EtFOSA (surr.)	1	%	128	120	117	113
D7-N-MeFOSE (surr.)	1	%	104	102	90	103
D9-N-EtFOSE (surr.)	1	%	87	81	84	87
D5-N-EtFOSAA (surr.)	1	%	98	74	107	103
D3-N-MeFOSAA (surr.)	1	%	101	77	110	96
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	121	131	133	115
18O2-PFHxS (surr.)	1	%	105	114	120	120
13C8-PFOS (surr.)	1	%	120	124	123	122
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	117	99	109	103
13C2-6:2 FTSA (surr.)	1	%	99	95	93	88
13C2-8:2 FTSA (surr.)	1	%	130	140	109	125
13C2-10:2 FTSA (surr.)	1	%	134	151	144	156
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX174/0.4-0.5	GX174/0.9-1.0	GX174/1.4-1.5	GX175/0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ma0000746	S24-Ma0000747	S24-Ma0000748	S24-Ma0000749
Date Sampled			Feb 26, 2024	Feb 26, 2024	Feb 26, 2024	Feb 27, 2024
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	11	49	12	17
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	108	105	108	103
13C5-PFPeA (surr.)	1	%	132	127	112	108
13C5-PFHxA (surr.)	1	%	120	135	126	121
13C4-PFHpA (surr.)	1	%	110	88	119	127
13C8-PFOA (surr.)	1	%	112	113	123	101
13C5-PFNA (surr.)	1	%	117	110	108	110
13C6-PFDA (surr.)	1	%	118	99	114	108
13C2-PFUnDA (surr.)	1	%	130	119	117	114
13C2-PFDoDA (surr.)	1	%	116	111	103	97
13C2-PFTeDA (surr.)	1	%	140	118	132	127
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	100	101	98	109
D3-N-MeFOSA (surr.)	1	%	127	113	103	109
D5-N-EtFOSA (surr.)	1	%	127	113	116	116
D7-N-MeFOSE (surr.)	1	%	97	94	101	91
D9-N-EtFOSE (surr.)	1	%	90	93	83	87
D5-N-EtFOSAA (surr.)	1	%	122	120	99	90
D3-N-MeFOSAA (surr.)	1	%	116	100	93	99
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5

Client Sample ID			GX174/0.4-0.5	GX174/0.9-1.0	GX174/1.4-1.5	GX175/0.3-0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ma0000746	S24-Ma0000747	S24-Ma0000748	S24-Ma0000749
Date Sampled			Feb 26, 2024	Feb 26, 2024	Feb 26, 2024	Feb 27, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	120	124	132	135
18O2-PFHxS (surr.)	1	%	122	118	124	123
13C8-PFOS (surr.)	1	%	131	120	119	111
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	112	123	103	129
13C2-6:2 FTSA (surr.)	1	%	82	138	103	105
13C2-8:2 FTSA (surr.)	1	%	114	124	162	103
13C2-10:2 FTSA (surr.)	1	%	158	140	137	144
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Client Sample ID			GX175/1.4-1.5	DS3C	DS4C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Ma0000750	S24-Ma0000751	S24-Ma0000752
Date Sampled			Feb 27, 2024	Feb 26, 2024	Feb 27, 2024
Test/Reference	LOR	Unit			
Sample Properties					
% Moisture	1	%	11	11	20
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	104	103	107
13C5-PFPeA (surr.)	1	%	105	114	124
13C5-PFHxA (surr.)	1	%	114	114	138
13C4-PFHpA (surr.)	1	%	117	110	108

Client Sample ID			GX175/1.4-1.5	DS3C	DS4C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Ma0000750	S24-Ma0000751	S24-Ma0000752
Date Sampled			Feb 27, 2024	Feb 26, 2024	Feb 27, 2024
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
13C8-PFOA (surr.)	1	%	105	107	104
13C5-PFNA (surr.)	1	%	116	117	123
13C6-PFDA (surr.)	1	%	111	107	107
13C2-PFUnDA (surr.)	1	%	115	124	121
13C2-PFDoDA (surr.)	1	%	118	122	127
13C2-PFTeDA (surr.)	1	%	119	128	128
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10
13C8-FOSA (surr.)	1	%	102	104	100
D3-N-MeFOSA (surr.)	1	%	89	105	108
D5-N-EtFOSA (surr.)	1	%	126	130	124
D7-N-MeFOSE (surr.)	1	%	86	96	108
D9-N-EtFOSE (surr.)	1	%	95	89	93
D5-N-EtFOSAA (surr.)	1	%	116	101	78
D3-N-MeFOSAA (surr.)	1	%	100	127	92
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	131	131	124
18O2-PFHxS (surr.)	1	%	120	121	118
13C8-PFOS (surr.)	1	%	111	121	116
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	126	134	120
13C2-6:2 FTSA (surr.)	1	%	106	116	88
13C2-8:2 FTSA (surr.)	1	%	98	91	118
13C2-10:2 FTSA (surr.)	1	%	138	172	143

Client Sample ID			GX175/1.4-1.5	DS3C	DS4C
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S24-Ma0000750	S24-Ma0000751	S24-Ma0000752
Date Sampled			Feb 27, 2024	Feb 26, 2024	Feb 27, 2024
Test/Reference	LOR	Unit			
PFASs Summations					
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Mar 01, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Mar 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Mar 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Mar 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Mar 06, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Mar 01, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06264
Report #: 1073963
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 29, 2024 5:30 PM
Due: Mar 7, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	GX170/0.4-0.5	Feb 27, 2024		Soil	S24-Ma0000742	X	X
2	GX170/.4-1.5	Feb 27, 2024		Soil	S24-Ma0000743	X	X
3	GX173/0.4-0.5	Feb 26, 2024		Soil	S24-Ma0000744	X	X
4	GX173/1.4-1.5	Feb 26, 2024		Soil	S24-Ma0000745	X	X
5	GX174/0.4-0.5	Feb 26, 2024		Soil	S24-Ma0000746	X	X
6	GX174/0.9-1.0	Feb 26, 2024		Soil	S24-Ma0000747	X	X
7	GX174/1.4-1.5	Feb 26, 2024		Soil	S24-Ma0000748	X	X
8	GX175/0.3-0.4	Feb 27, 2024		Soil	S24-Ma0000749	X	X
9	GX175/1.4-1.5	Feb 27, 2024		Soil	S24-Ma0000750	X	X
10	DS3C	Feb 26, 2024		Soil	S24-Ma0000751	X	X
11	DS4C	Feb 27, 2024		Soil	S24-Ma0000752	X	X
12	R5	Feb 26, 2024		Water	S24-Ma0000753		X
13	R6	Feb 26, 2024		Water	S24-Ma0000754		X
14	R7	Feb 27, 2024		Water	S24-Ma0000755		X

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
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Phone: 02 9979 1722
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Received: Feb 29, 2024 5:30 PM
Due: Mar 7, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
15	R8	Feb 27, 2024		Water	S24-Ma0000756		X
16	R9	Feb 27, 2024		Water	S24-Ma0000757		X
17	BLANK	Feb 27, 2024		Water	S24-Ma0000758		X
Test Counts						11	17

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	113			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	116			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	126			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	92			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	104			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	125			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	117			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	115			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	115			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	120			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	112			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	117			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	117			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	108			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	114			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	106			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	134			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	130			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	108			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	96			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	96			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorohexanesulfonic acid (PFHxS)	%	106			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	121			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	93			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	117			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	142			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	119			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	120			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	115			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	126			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	121			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	135			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	111			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	148			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	114			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	117			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	106			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	120			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	101			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	106			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	149			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	104			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	118			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	115			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	111			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	106			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	105			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	118			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	123			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	110			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	117			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	108			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ma0000742	CP	%	105			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ma0000742	CP	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ma0000742	CP	%	107			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ma0000742	CP	%	118			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ma0000742	CP	%	101			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ma0000742	CP	%	107			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ma0000742	CP	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ma0000742	CP	%	118			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ma0000742	CP	%	86			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ma0000742	CP	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ma0000742	CP	%	88			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ma0008695	NCP	%	112			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ma0008695	NCP	%	128			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ma0008695	NCP	%	109			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ma0008695	NCP	%	117			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ma0008695	NCP	%	129			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ma0008695	NCP	%	113			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ma0008695	NCP	%	119			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ma0008695	NCP	%	112			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0008695	NCP	%	108			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ma0008695	NCP	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ma0008695	NCP	%	96			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ma0008695	NCP	%	111			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ma0008695	NCP	%	101			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ma0008695	NCP	%	102			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ma0008695	NCP	%	107			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ma0008695	NCP	%	107			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0008695	NCP	%	125			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ma0008685	NCP	%	99			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ma0008695	NCP	%	114			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ma0000743	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ma0000743	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0000743	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ma0000743	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

This report has been revised (V2) to correct the sampling date for sample S24-Ma0000755 from Fe 26, 2024 to Feb 27, 2024 as per COC.

This report has been revised (V3) to correct the sampling date for sample S24-Ma0000744 and S24-Ma0000744 from Feb 27, 2024 to Feb 26, 2024 and for samples S24-Ma0000749 and S24-Ma0000750 from Fe 26, 2024 to Feb 27, 2024 as per client request.

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:

Asim Khan	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-PFAS
Roopesh Rangarajan	Senior Analyst-Sample Properties



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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Geo-Logix P/L
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Warriewood
NSW 2102

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Attention: **Jenna Maltman**

Report **1073963-W-V3**
Project name RICHMOND
Project ID 2301034C
Received Date Feb 29, 2024

Client Sample ID			**R5**	**R6**	**R7**	**R8**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S24-Ma0000753**	**S24-Ma0000754**	**S24-Ma0000755**	**S24-Ma0000756**
Date Sampled			**Feb 26, 2024**	**Feb 26, 2024**	**Feb 27, 2024**	**Feb 27, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	112	112	126	107
13C5-PFPeA (surr.)	1	%	119	120	117	120
13C5-PFHxA (surr.)	1	%	139	124	129	116
13C4-PFHpA (surr.)	1	%	115	120	115	117
13C8-PFOA (surr.)	1	%	129	122	139	115
13C5-PFNA (surr.)	1	%	108	106	114	111
13C6-PFDA (surr.)	1	%	110	100	100	105
13C2-PFUnDA (surr.)	1	%	95	101	92	79
13C2-PFDoDA (surr.)	1	%	77	82	66	63
13C2-PFTeDA (surr.)	1	%	58	65	59	54
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	101	89	97	98
D3-N-MeFOSA (surr.)	1	%	91	104	96	81

Client Sample ID			R5	R6	R7	R8
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ma0000753	S24-Ma0000754	S24-Ma0000755	S24-Ma0000756
Date Sampled			Feb 26, 2024	Feb 26, 2024	Feb 27, 2024	Feb 27, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	106	109	109	90
D7-N-MeFOSE (surr.)	1	%	82	99	95	91
D9-N-EtFOSE (surr.)	1	%	92	92	93	85
D5-N-EtFOSAA (surr.)	1	%	108	87	98	83
D3-N-MeFOSAA (surr.)	1	%	99	93	108	91
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	132	122	135	123
18O2-PFHxS (surr.)	1	%	136	131	142	122
13C8-PFOS (surr.)	1	%	106	113	104	99
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	113	115	113	106
13C2-6:2 FTSA (surr.)	1	%	105	89	107	98
13C2-8:2 FTSA (surr.)	1	%	133	133	135	139
13C2-10:2 FTSA (surr.)	1	%	79	86	77	87
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			R9	BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ma0000757	S24-Ma0000758
Date Sampled			Feb 27, 2024	Feb 27, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01

Client Sample ID			R9	BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ma0000757	S24-Ma0000758
Date Sampled			Feb 27, 2024	Feb 27, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	122	116
13C5-PFPeA (surr.)	1	%	127	124
13C5-PFHxA (surr.)	1	%	132	129
13C4-PFHpA (surr.)	1	%	119	107
13C8-PFOA (surr.)	1	%	122	112
13C5-PFNA (surr.)	1	%	105	105
13C6-PFDA (surr.)	1	%	103	82
13C2-PFUnDA (surr.)	1	%	75	83
13C2-PFDoDA (surr.)	1	%	65	63
13C2-PFTeDA (surr.)	1	%	43	57
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	106	87
D3-N-MeFOSA (surr.)	1	%	87	97
D5-N-EtFOSA (surr.)	1	%	81	99
D7-N-MeFOSE (surr.)	1	%	85	90
D9-N-EtFOSE (surr.)	1	%	69	81
D5-N-EtFOSAA (surr.)	1	%	93	87
D3-N-MeFOSAA (surr.)	1	%	90	88
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	137	127
18O2-PFHxS (surr.)	1	%	137	131
13C8-PFOS (surr.)	1	%	106	96

Client Sample ID			R9	BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ma0000757	S24-Ma0000758
Date Sampled			Feb 27, 2024	Feb 27, 2024
Test/Reference	LOR	Unit		
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	120	111
13C2-6:2 FTSA (surr.)	1	%	104	100
13C2-8:2 FTSA (surr.)	1	%	117	116
13C2-10:2 FTSA (surr.)	1	%	69	67
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Mar 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Mar 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Mar 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Mar 01, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Mar 01, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Site# 2554

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06264
Report #: 1073963
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 29, 2024 5:30 PM
Due: Mar 7, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	GX170/0.4-0.5	Feb 27, 2024		Soil	S24-Ma0000742	X	X
2	GX170/.4-1.5	Feb 27, 2024		Soil	S24-Ma0000743	X	X
3	GX173/0.4-0.5	Feb 26, 2024		Soil	S24-Ma0000744	X	X
4	GX173/1.4-1.5	Feb 26, 2024		Soil	S24-Ma0000745	X	X
5	GX174/0.4-0.5	Feb 26, 2024		Soil	S24-Ma0000746	X	X
6	GX174/0.9-1.0	Feb 26, 2024		Soil	S24-Ma0000747	X	X
7	GX174/1.4-1.5	Feb 26, 2024		Soil	S24-Ma0000748	X	X
8	GX175/0.3-0.4	Feb 27, 2024		Soil	S24-Ma0000749	X	X
9	GX175/1.4-1.5	Feb 27, 2024		Soil	S24-Ma0000750	X	X
10	DS3C	Feb 26, 2024		Soil	S24-Ma0000751	X	X
11	DS4C	Feb 27, 2024		Soil	S24-Ma0000752	X	X
12	R5	Feb 26, 2024		Water	S24-Ma0000753		X
13	R6	Feb 26, 2024		Water	S24-Ma0000754		X
14	R7	Feb 27, 2024		Water	S24-Ma0000755		X

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: P06264
Report #: 1073963
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 29, 2024 5:30 PM
Due: Mar 7, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
15	R8	Feb 27, 2024		Water	S24-Ma0000756		X
16	R9	Feb 27, 2024		Water	S24-Ma0000757		X
17	BLANK	Feb 27, 2024		Water	S24-Ma0000758		X
Test Counts						11	17

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	117			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	123			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	118			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	109			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	131			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	121			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	128			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	133			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	114			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	135			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	108			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	120			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	105			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	125			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	108			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	118			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	128			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	123			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	100			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	103			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	115			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	123			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	81			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	124			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	132			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	124			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ma0003389	NCP	%	110			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ma0003389	NCP	%	115			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ma0003389	NCP	%	61			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ma0003389	NCP	%	123			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ma0003389	NCP	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ma0003389	NCP	%	109			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ma0003389	NCP	%	106			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ma0003389	NCP	%	103			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ma0003389	NCP	%	103			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ma0003389	NCP	%	127			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ma0003389	NCP	%	100			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ma0003389	NCP	%	113			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ma0003389	NCP	%	104			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ma0003389	NCP	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ma0003389	NCP	%	96			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ma0003389	NCP	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ma0003389	NCP	%	100			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ma0003389	NCP	%	111			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ma0003389	NCP	%	75			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0003389	NCP	%	107			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ma0003389	NCP	%	66			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ma0003389	NCP	%	54			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ma0003389	NCP	%	132			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ma0003389	NCP	%	124			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Fe0069978	NCP	%	109			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ma0003389	NCP	%	102			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ma0003389	NCP	%	114			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0003389	NCP	%	117			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ma0003389	NCP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ma0003389	NCP	%	98			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	N24-Fe0069508	NCP	ug/L	0.03	0.03	11	30%	Pass	
Perfluorohexanoic acid (PFHxA)	N24-Fe0069508	NCP	ug/L	0.23	0.21	6.5	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	N24-Fe0069508	NCP	ug/L	0.02	0.02	15	30%	Pass	
Perfluorooctanoic acid (PFOA)	N24-Fe0069508	NCP	ug/L	0.02	0.01	13	30%	Pass	
Perfluorononanoic acid (PFNA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	N24-Fe0069508	NCP	ug/L	0.09	0.09	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	N24-Fe0069508	NCP	ug/L	0.01	0.01	9.1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	N24-Fe0069508	NCP	ug/L	0.05	0.05	8.7	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N24-Fe0069508	NCP	ug/L	1.2	1.2	4.6	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	N24-Fe0069508	NCP	ug/L	0.01	0.02	10	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	N24-Fe0069508	NCP	ug/L	1.6	1.6	1.4	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	N24-Fe0069508	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	N24-Fe0069508	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

This report has been revised (V2) to correct the sampling date for sample S24-Ma0000755 from Fe 26, 2024 to Feb 27, 2024 as per COC.

This report has been revised (V3) to correct the sampling date for sample S24-Ma0000744 and S24-Ma0000744 from Feb 27, 2024 to Feb 26, 2024 and for samples S24-Ma0000749 and S24-Ma0000750 from Fe 26, 2024 to Feb 27, 2024 as per client request.

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:

Asim Khan — Analytical Services Manager



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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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Geo-Logix P/L
Contact name: Jenna Maltman
Project name: RICHMOND
Project ID: 2301034C
Turnaround time: 5 Day
Date/Time received Feb 29, 2024 5:30 PM
Eurofins reference 1073963

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 : 2.3 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 230134c
Date Submitted: 29/2/24

Purchase Order No: PO6264
Quote Reference: 230714GXLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Std

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS 30 compounds	Hold	SUITE
	GX170/0.4-0.5	27/2/24	X																								X			
	GX170/1.4-1.5	27/2/24	X																								X			
	GX173/0.4-0.5	27/2/24	X																								X			
	GX173/1.4-1.5	27/2/24	X																								X			
	GX174/0.4-0.5	26/2/24	X																								X			
	GX174/0.9-1.0	26/2/24	X																								X	X		
	GX174/1.4-1.5	26/2/24	X																								X			
	GX175/0.3-0.4	26/2/24	X																								X			
	GX175/1.4-1.5	26/2/24	X																								X			
	DS3c	26/2/24	X																								X			
	DS4c	27/2/24	X																								X			
	RS	26/2/24	X																								X			
	RC	26/2/24	X																								X			
	R7	27/2/24	X																								X			
	R8	27/2/24	X																								X			
	R9	27/2/24	X																								X			
	Blank	27/2/24	X																								X			

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 29/2/24 Signature: [signature] Received by: [signature] Date/Time: 29/2 Signature: [signature]

5.30 2-7 1073963

Version: V1
Date Issued: April 2019
Review Date: April 2021

Asim Khan

From: Jenna Maltman <jmaltman@geo-logix.com.au>
Sent: Tuesday, 11 June 2024 3:24 PM
To: EnviroSampleNSW@eurofins.com
Cc: AsimKhan@eurofins.com
Subject: 1073963-S amendments

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Hi Asim,

Could please get the following sample dates corrected for Report #1073963-S:

GX Reference	Eurofins Reference	Date
GX173/0.4-0.5	**S24-Ma0000744**	26/02/2024
GX173/1.4-1.5	**S24-Ma0000745**	26/02/2024
GX175/0.3-0.4	**S24-Ma0000749**	27/02/2024
GX175/1.4-1.5	**S24-Ma0000750**	27/02/2024

Kind Regards,

Jenna Maltman | Auditor Assistant
Unit 2309/4 Daydream St, Warriewood NSW 2102
T: 02 9979 1722 | www.geo-logix.com.au



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NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1073964-S**
Project name RICHMOMND
Project ID 2301034C
Received Date Feb 29, 2024

Client Sample ID			**TS3C**	**TS4C**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S24-Ma0000763**	**S24-Ma0000764**
Date Sampled			**Feb 26, 2024**	**Feb 27, 2024**
Test/Reference	LOR	Unit		
Sample Properties				
% Moisture	1	%	10	27
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5
13C4-PFBA (surr.)	1	%	111	108
13C5-PFPeA (surr.)	1	%	112	110
13C5-PFHxA (surr.)	1	%	95	90
13C4-PFHpA (surr.)	1	%	89	90
13C8-PFOA (surr.)	1	%	98	94
13C5-PFNA (surr.)	1	%	116	115
13C6-PFDA (surr.)	1	%	90	89
13C2-PFUnDA (surr.)	1	%	94	95
13C2-PFDoDA (surr.)	1	%	110	106
13C2-PFTeDA (surr.)	1	%	103	103
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10

Client Sample ID			TS3C	TS4C
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-Ma0000763	S24-Ma0000764
Date Sampled			Feb 26, 2024	Feb 27, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
13C8-FOSA (surr.)	1	%	96	98
D3-N-MeFOSA (surr.)	1	%	111	116
D5-N-EtFOSA (surr.)	1	%	121	125
D7-N-MeFOSE (surr.)	1	%	88	90
D9-N-EtFOSE (surr.)	1	%	84	83
D5-N-EtFOSAA (surr.)	1	%	128	106
D3-N-MeFOSAA (surr.)	1	%	140	117
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5
13C3-PFBS (surr.)	1	%	92	91
18O2-PFHxS (surr.)	1	%	92	93
13C8-PFOS (surr.)	1	%	66	65
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	78	89
13C2-6:2 FTSA (surr.)	1	%	130	116
13C2-8:2 FTSA (surr.)	1	%	99	103
13C2-10:2 FTSA (surr.)	1	%	110	113
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Mar 01, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Mar 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Mar 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Mar 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Mar 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Mar 01, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOMND
Project ID: 2301034C

Order No.: P06265
Report #: 1073964
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Feb 29, 2024 5:30 PM
Due: Mar 7, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TS3C	Feb 26, 2024		Soil	S24-Ma0000763	X	X
2	TS4C	Feb 27, 2024		Soil	S24-Ma0000764	X	X
Test Counts						2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	83			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	80			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	81			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	83			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	82			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	85			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	85			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	86			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	68			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	88			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	85			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	88			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	85			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	89			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	82			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	89			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	77			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	90			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	90			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	78			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	81			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	93			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	71			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	95			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	80			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M24-Ma0006841	NCP	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ma0006841	NCP	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ma0006841	NCP	%	91			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ma0006841	NCP	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ma0006841	NCP	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	M24-Ma0006841	NCP	%	92			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ma0006841	NCP	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ma0006841	NCP	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ma0006841	NCP	%	98			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ma0006841	NCP	%	75			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ma0006841	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M24-Ma0006841	NCP	%	92			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ma0006841	NCP	%	97			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ma0006841	NCP	%	107			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ma0006841	NCP	%	95			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ma0006841	NCP	%	97			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ma0006841	NCP	%	88			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ma0006841	NCP	%	94			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M24-Ma0006841	NCP	%	87			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ma0006841	NCP	%	112			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ma0006841	NCP	%	105			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ma0006841	NCP	%	78			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ma0006841	NCP	%	92			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ma0006841	NCP	%	113			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ma0006841	NCP	%	103			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ma0006841	NCP	%	111			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ma0006841	NCP	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ma0006841	NCP	%	91			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ma0006841	NCP	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ma0006841	NCP	%	91			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	M24-Ma0000512	NCP	%	16	18	15	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ma0006844	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ma0006844	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ma0006844	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ma0006844	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOMND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Feb 29, 2024 5:30 PM
Eurofins reference	1073964

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 : 2.3 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 230934c
Date Submitted: 29/2/24

Page 1 of 1
Purchase Order No: P06265
Quote Reference: 230714 GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: Std

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS 30 compounds	Hold	SUITE
	TS3c	26/2/24	X					please send to melbourne																			X			
	TS4c	27/2/24	X																								X			

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Jenna Maltman Date/Time: 29/2/24 Signature: JMaltman
Received by: Greg Date/Time: 29/2 5.30 Signature:

2.3

1073964

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1083225-S**
Project name RICHMOND
Project ID 2301034C
Received Date Mar 28, 2024

Client Sample ID			**GX171/0.4-0.5**	**GX171/1.4-1.5**	**GX171/2.9-3.0**	**DS5C**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S24-Ap0001400**	**S24-Ap0001401**	**S24-Ap0001402**	**S24-Ap0001403**
Date Sampled			**Mar 25, 2024**	**Mar 25, 2024**	**Mar 25, 2024**	**Mar 25, 2024**
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	19	13	11	16
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C4-PFBA (surr.)	1	%	100	96	101	107
13C5-PFPeA (surr.)	1	%	108	109	111	108
13C5-PFHxA (surr.)	1	%	121	102	119	133
13C4-PFHpA (surr.)	1	%	102	109	106	122
13C8-PFOA (surr.)	1	%	108	103	105	101
13C5-PFNA (surr.)	1	%	104	100	97	108
13C6-PFDA (surr.)	1	%	98	99	91	103
13C2-PFUnDA (surr.)	1	%	100	101	100	98
13C2-PFDoDA (surr.)	1	%	89	97	91	96
13C2-PFTeDA (surr.)	1	%	111	117	108	124
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10

Client Sample ID			GX171/0.4-0.5	GX171/1.4-1.5	GX171/2.9-3.0	DS5C
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S24-Ap0001400	S24-Ap0001401	S24-Ap0001402	S24-Ap0001403
Date Sampled			Mar 25, 2024	Mar 25, 2024	Mar 25, 2024	Mar 25, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
13C8-FOSA (surr.)	1	%	95	97	87	91
D3-N-MeFOSA (surr.)	1	%	113	113	108	115
D5-N-EtFOSA (surr.)	1	%	112	116	123	122
D7-N-MeFOSE (surr.)	1	%	103	92	104	92
D9-N-EtFOSE (surr.)	1	%	101	92	98	98
D5-N-EtFOSAA (surr.)	1	%	96	98	76	104
D3-N-MeFOSAA (surr.)	1	%	105	104	75	120
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	< 5	< 5	< 5
13C3-PFBS (surr.)	1	%	120	107	103	119
18O2-PFHxS (surr.)	1	%	99	96	99	98
13C8-PFOS (surr.)	1	%	105	94	96	94
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10	< 10	< 10	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	< 5	< 5	< 5
13C2-4:2 FTSA (surr.)	1	%	95	109	94	123
13C2-6:2 FTSA (surr.)	1	%	67	69	112	94
13C2-8:2 FTSA (surr.)	1	%	98	87	68	81
13C2-10:2 FTSA (surr.)	1	%	77	72	85	99
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	< 5	< 5	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	< 10	< 10	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50	< 50	< 50	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Sydney	Apr 02, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Apr 02, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6287
Report #: 1083225
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Mar 28, 2024 5:55 PM
Due: Apr 8, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	GX171/0.4-0.5	Mar 25, 2024		Soil	S24-Ap0001400	X	X
2	GX171/1.4-1.5	Mar 25, 2024		Soil	S24-Ap0001401	X	X
3	GX171/2.9-3.0	Mar 25, 2024		Soil	S24-Ap0001402	X	X
4	DS5C	Mar 25, 2024		Soil	S24-Ap0001403	X	X
5	RW10	Mar 25, 2024		Water	S24-Ap0001404		X
Test Counts						4	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	91			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	90			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	87			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	90			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	95			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	96			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	79			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	96			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	110			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	107			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	78			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	98			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	99			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	103			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	94			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	98			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	111			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	87			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	114			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	106			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ap0003166	NCP	%	115			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ap0003166	NCP	%	124			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ap0003166	NCP	%	129			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ap0003166	NCP	%	105			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ap0003166	NCP	%	127			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ap0003166	NCP	%	128			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ap0003166	NCP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ap0003166	NCP	%	120			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ap0003166	NCP	%	129			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ap0003166	NCP	%	108			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ap0003166	NCP	%	105			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ap0003166	NCP	%	119			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ap0003166	NCP	%	129			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ap0003166	NCP	%	137			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ap0003166	NCP	%	133			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ap0003166	NCP	%	122			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ap0003166	NCP	%	112			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ap0003166	NCP	%	124			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ap0003166	NCP	%	133			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ap0003166	NCP	%	113			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ap0003166	NCP	%	125			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ap0003166	NCP	%	123			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ap0003166	NCP	%	112			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ap0003166	NCP	%	113			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ap0003166	NCP	%	113			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ap0003166	NCP	%	105			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ap0003166	NCP	%	131			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ap0003166	NCP	%	124			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ap0003166	NCP	%	127			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ap0003166	NCP	%	116			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ap0001401	CP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ap0001401	CP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ap0001401	CP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ap0001401	CP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Ap0001403	CP	%	16	16	1.8	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:

Asim Khan Analytical Services Manager



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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Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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Attention: **Jenna Maltman**

Report **1083225-W**
Project name RICHMOND
Project ID 2301034C
Received Date Mar 28, 2024

Client Sample ID			**RW10**
Sample Matrix			**Water**
Eurofins Sample No.			**S24-Ap0001404**
Date Sampled			**Mar 25, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	99
13C5-PFPeA (surr.)	1	%	108
13C5-PFHxA (surr.)	1	%	112
13C4-PFHpA (surr.)	1	%	119
13C8-PFOA (surr.)	1	%	118
13C5-PFNA (surr.)	1	%	104
13C6-PFDA (surr.)	1	%	105
13C2-PFUnDA (surr.)	1	%	86
13C2-PFDoDA (surr.)	1	%	79
13C2-PFTeDA (surr.)	1	%	97
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	94
D3-N-MeFOSA (surr.)	1	%	88

Client Sample ID			RW10
Sample Matrix			Water
Eurofins Sample No.			S24-Ap0001404
Date Sampled			Mar 25, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	101
D7-N-MeFOSE (surr.)	1	%	91
D9-N-EtFOSE (surr.)	1	%	91
D5-N-EtFOSAA (surr.)	1	%	81
D3-N-MeFOSAA (surr.)	1	%	93
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	117
18O2-PFHxS (surr.)	1	%	109
13C8-PFOS (surr.)	1	%	92
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	107
13C2-6:2 FTSA (surr.)	1	%	89
13C2-8:2 FTSA (surr.)	1	%	69
13C2-10:2 FTSA (surr.)	1	%	48
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Apr 04, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Apr 02, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6287
Report #: 1083225
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Mar 28, 2024 5:55 PM
Due: Apr 8, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	GX171/0.4-0.5	Mar 25, 2024		Soil	S24-Ap0001400	X	X
2	GX171/1.4-1.5	Mar 25, 2024		Soil	S24-Ap0001401	X	X
3	GX171/2.9-3.0	Mar 25, 2024		Soil	S24-Ap0001402	X	X
4	DS5C	Mar 25, 2024		Soil	S24-Ap0001403	X	X
5	RW10	Mar 25, 2024		Water	S24-Ap0001404		X
Test Counts						4	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	97			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	95			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	95			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	103			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	106			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	113			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	110			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	94			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	104			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	107			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	106			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	118			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	113			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	106			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	104			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	101			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	103			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	109			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	100			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	92			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	99			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	130			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	105			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	106			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	104			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	R24-Ma0062239	NCP	%	101			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	R24-Ma0062239	NCP	%	111			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	R24-Ma0062239	NCP	%	125			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	R24-Ma0062239	NCP	%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)	R24-Ma0062239	NCP	%	120			50-150	Pass	
Perfluorononanoic acid (PFNA)	R24-Ma0062239	NCP	%	124			50-150	Pass	
Perfluorodecanoic acid (PFDA)	R24-Ma0062239	NCP	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	R24-Ma0062239	NCP	%	109			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	R24-Ma0062239	NCP	%	99			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	R24-Ma0062239	NCP	%	89			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	R24-Ma0062239	NCP	%	105			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	R24-Ma0062239	NCP	%	117			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	R24-Ma0062239	NCP	%	89			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	R24-Ma0062239	NCP	%	92			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	R24-Ma0062239	NCP	%	101			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	R24-Ma0062239	NCP	%	95			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	R24-Ma0062239	NCP	%	82			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	R24-Ma0062239	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	R24-Ma0062239	NCP	%	130			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	R24-Ma0062239	NCP	%	111			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	R24-Ma0062239	NCP	%	109			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	R24-Ma0062239	NCP	%	123			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	R24-Ma0062239	NCP	%	104			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	R24-Ma0062239	NCP	%	125			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	R24-Ma0062239	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	R24-Ma0062239	NCP	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	R24-Ma0062239	NCP	%	101			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	N24-Ma0067711	NCP	ug/L	0.05	0.06	5.3	30%	Pass	
Perfluoropentanoic acid (PFPeA)	N24-Ma0067711	NCP	ug/L	0.08	0.09	6.0	30%	Pass	
Perfluorohexanoic acid (PFHxA)	N24-Ma0067711	NCP	ug/L	0.26	0.27	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	N24-Ma0067711	NCP	ug/L	0.03	0.03	10	30%	Pass	
Perfluorooctanoic acid (PFOA)	N24-Ma0067711	NCP	ug/L	0.08	0.09	11	30%	Pass	
Perfluorononanoic acid (PFNA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	N24-Ma0067711	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	N24-Ma0067711	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	N24-Ma0067711	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	N24-Ma0067711	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	N24-Ma0067711	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	N24-Ma0067711	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	N24-Ma0067711	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	N24-Ma0067711	NCP	ug/L	0.04	0.04	5.3	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ma0061884	NCP	ug/L	< 0.01	**	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	N24-Ma0067711	NCP	ug/L	0.01	0.01	9.0	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	N24-Ma0067711	NCP	ug/L	0.06	0.05	9.5	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N24-Ma0067711	NCP	ug/L	0.98	0.83	17	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	N24-Ma0067711	NCP	ug/L	0.09	0.09	6.9	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	N24-Ma0067711	NCP	ug/L	6.4	5.8	10.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ma0070358	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	N24-Ma0067711	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Asim Khan Analytical Services Manager



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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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Mar 28, 2024 5:55 PM
Eurofins reference	1083225

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 : 7.3 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Mattman / Joe Unwin
Contact email: jmattman@geologix.com.au / junwin@...
Project Name: Richmond
Project Number: 2301034#C
Date Submitted: 27.3.24

Page ___ of ___
Purchase Order No: P06287
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS-30 Compounds		Hold	SUITE
	GX171/0.4-0.5	25/3/24	X																								X			
	GX171/1.4-1.5	↓	X																								X			
	GX171/2.9-3.0		X																								X			
	DS5C		X																								X			
	RW#10	↓		X																							X			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Joe - U Date/Time: 27.3.24 Signature:
Received by: Brendan Date/Time: 28/3 5:55 pm 7.3°C Signature:

1083225

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1083337-S**
Project name RICHMOND
Project ID 2301034C
Received Date Mar 28, 2024

Client Sample ID			**TS5C**
Sample Matrix			**Soil**
Eurofins Sample No.			**S24-Ap0002370**
Date Sampled			**Mar 25, 2024**
Test/Reference	LOR	Unit	
Sample Properties			
% Moisture	1	%	15
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	110
13C5-PFPeA (surr.)	1	%	131
13C5-PFHxA (surr.)	1	%	110
13C4-PFHpA (surr.)	1	%	118
13C8-PFOA (surr.)	1	%	114
13C5-PFNA (surr.)	1	%	126
13C6-PFDA (surr.)	1	%	82
13C2-PFUnDA (surr.)	1	%	104
13C2-PFDoDA (surr.)	1	%	122
13C2-PFTeDA (surr.)	1	%	100
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10

Client Sample ID			TS5C
Sample Matrix			Soil
Eurofins Sample No.			S24-Ap0002370
Date Sampled			Mar 25, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
13C8-FOSA (surr.)	1	%	79
D3-N-MeFOSA (surr.)	1	%	114
D5-N-EtFOSA (surr.)	1	%	100
D7-N-MeFOSE (surr.)	1	%	89
D9-N-EtFOSE (surr.)	1	%	78
D5-N-EtFOSAA (surr.)	1	%	134
D3-N-MeFOSAA (surr.)	1	%	126
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	106
18O2-PFHxS (surr.)	1	%	102
13C8-PFOS (surr.)	1	%	60
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	101
13C2-6:2 FTSA (surr.)	1	%	85
13C2-8:2 FTSA (surr.)	1	%	105
13C2-10:2 FTSA (surr.)	1	%	120
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=30)*	50	ug/kg	< 50

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
% Moisture	Melbourne	Apr 04, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Apr 02, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6288
Report #: 1083337
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Mar 28, 2024 5:55 PM
Due: Apr 8, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Moisture Set	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TS5C	Mar 25, 2024		Soil	S24-Ap0002370	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	89			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	73			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	71			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	83			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	91			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	86			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	91			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	90			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	87			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	96			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	81			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	89			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	81			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	105			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	75			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	76			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	78			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	80			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	128			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	82			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	74			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	74			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	106			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	127			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	74			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	81			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M24-Ap0008011	NCP	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ap0008011	NCP	%	97			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ap0008011	NCP	%	82			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ap0008011	NCP	%	76			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ap0008011	NCP	%	89			50-150	Pass	
Perfluorononanoic acid (PFNA)	M24-Ap0008011	NCP	%	99			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ap0008011	NCP	%	97			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ap0008011	NCP	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ap0008011	NCP	%	94			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ap0008011	NCP	%	97			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ap0008011	NCP	%	99			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M24-Ap0008011	NCP	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ap0008011	NCP	%	97			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ap0008011	NCP	%	88			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ap0008011	NCP	%	103			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ap0008011	NCP	%	87			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ap0008011	NCP	%	78			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ap0008011	NCP	%	90			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M24-Ap0008011	NCP	%	86			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ap0008011	NCP	%	147			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ap0008011	NCP	%	89			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ap0008011	NCP	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ap0008011	NCP	%	86			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ap0008011	NCP	%	126			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ap0008011	NCP	%	83			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ap0006227	NCP	%	126			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ap0008011	NCP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ap0008011	NCP	%	82			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ap0008011	NCP	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ap0008011	NCP	%	89			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	M24-Ap0006227	NCP	%	10	9.6	5.8	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ap0008012	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ap0008012	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ap0008012	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ap0008012	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

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Eurofins Environment Testing Australia Pty Ltd

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Mar 28, 2024 5:55 PM
Eurofins reference	1083337

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 : 7.3 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

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Mattman / Joe Unwin
Contact email: jmattman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034C Date Submitted: 27.3.24

Page ___ of ___
Purchase Order No: P06288
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS-20 Compounds	Hold	SUITE
	TS5C	25.3.24	X					Send to Eurofins Melbourne																			X		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: Joe. U Date/Time: 27.3.24 Signature:
Received by: ~~Zoe~~ Bourgaize Date/Time: 28/3 5:55 pm 7.1°C Signature:

1083337

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **Jenna Maltman**

Report **1084457-W**
Project name RICHMOND
Project ID 2301034C
Received Date Apr 04, 2024

Client Sample ID			**GW164**	**GW165**	**GW166**	**GW167**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S24-Ap0010096**	**S24-Ap0010097**	**S24-Ap0010098**	**S24-Ap0010099**
Date Sampled			**Apr 02, 2024**	**Apr 02, 2024**	**Apr 02, 2024**	**Apr 02, 2024**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	137	145	144	141
13C5-PFPeA (surr.)	1	%	137	139	147	149
13C5-PFHxA (surr.)	1	%	142	141	131	135
13C4-PFHpA (surr.)	1	%	121	131	143	141
13C8-PFOA (surr.)	1	%	145	140	137	137
13C5-PFNA (surr.)	1	%	116	130	131	143
13C6-PFDA (surr.)	1	%	113	120	135	119
13C2-PFUnDA (surr.)	1	%	119	96	110	116
13C2-PFDoDA (surr.)	1	%	107	92	114	112
13C2-PFTeDA (surr.)	1	%	125	91	114	126
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	104	98	106	131
D3-N-MeFOSA (surr.)	1	%	118	109	113	125

Client Sample ID			GW164	GW165	GW166	GW167
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010096	S24-Ap0010097	S24-Ap0010098	S24-Ap0010099
Date Sampled			Apr 02, 2024	Apr 02, 2024	Apr 02, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	125	113	120	127
D7-N-MeFOSE (surr.)	1	%	112	104	117	117
D9-N-EtFOSE (surr.)	1	%	119	106	117	127
D5-N-EtFOSAA (surr.)	1	%	95	91	111	103
D3-N-MeFOSAA (surr.)	1	%	97	95	103	100
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	142	134	140	128
18O2-PFHxS (surr.)	1	%	117	122	136	123
13C8-PFOS (surr.)	1	%	103	111	112	117
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	133	147	150	130
13C2-6:2 FTSA (surr.)	1	%	97	123	106	102
13C2-8:2 FTSA (surr.)	1	%	83	86	98	102
13C2-10:2 FTSA (surr.)	1	%	57	60	71	66
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW168	GW169	GW170	GW171
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010100	S24-Ap0010101	S24-Ap0010102	S24-Ap0010103
Date Sampled			Apr 02, 2024	Apr 02, 2024	Apr 02, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW168	GW169	GW170	GW171
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010100	S24-Ap0010101	S24-Ap0010102	S24-Ap0010103
Date Sampled			Apr 02, 2024	Apr 02, 2024	Apr 02, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	132	110	107	111
13C5-PFPeA (surr.)	1	%	129	114	104	127
13C5-PFHxA (surr.)	1	%	142	131	119	138
13C4-PFHpA (surr.)	1	%	129	117	102	117
13C8-PFOA (surr.)	1	%	144	118	123	128
13C5-PFNA (surr.)	1	%	130	112	105	113
13C6-PFDA (surr.)	1	%	122	113	92	93
13C2-PFUnDA (surr.)	1	%	115	105	86	95
13C2-PFDoDA (surr.)	1	%	115	104	86	89
13C2-PFTeDA (surr.)	1	%	125	117	101	114
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	103	105	82	95
D3-N-MeFOSA (surr.)	1	%	121	111	104	99
D5-N-EtFOSA (surr.)	1	%	119	120	104	108
D7-N-MeFOSE (surr.)	1	%	124	98	84	89
D9-N-EtFOSE (surr.)	1	%	121	95	81	99
D5-N-EtFOSAA (surr.)	1	%	108	106	78	96
D3-N-MeFOSAA (surr.)	1	%	108	94	86	95
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	138	127	121	136
18O2-PFHxS (surr.)	1	%	115	117	113	121
13C8-PFOS (surr.)	1	%	114	97	93	110

Client Sample ID			GW168	GW169	GW170	GW171
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010100	S24-Ap0010101	S24-Ap0010102	S24-Ap0010103
Date Sampled			Apr 02, 2024	Apr 02, 2024	Apr 02, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	135	120	120	124
13C2-6:2 FTSA (surr.)	1	%	102	94	88	112
13C2-8:2 FTSA (surr.)	1	%	84	98	80	106
13C2-10:2 FTSA (surr.)	1	%	67	58	56	60
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW172	GW173	GW174	GW175
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010104	S24-Ap0010105	S24-Ap0010106	S24-Ap0010107
Date Sampled			Apr 02, 2024	Apr 03, 2024	Apr 03, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	116	105	108	123
13C5-PFPeA (surr.)	1	%	128	110	113	120
13C5-PFHxA (surr.)	1	%	131	126	123	134
13C4-PFHpA (surr.)	1	%	125	105	128	120
13C8-PFOA (surr.)	1	%	125	108	118	128
13C5-PFNA (surr.)	1	%	116	100	102	117
13C6-PFDA (surr.)	1	%	113	90	100	110
13C2-PFUnDA (surr.)	1	%	102	88	85	92
13C2-PFDoDA (surr.)	1	%	105	87	86	84
13C2-PFTeDA (surr.)	1	%	129	107	96	70

Client Sample ID			GW172	GW173	GW174	GW175
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010104	S24-Ap0010105	S24-Ap0010106	S24-Ap0010107
Date Sampled			Apr 02, 2024	Apr 03, 2024	Apr 03, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	93	89	92	101
D3-N-MeFOSA (surr.)	1	%	105	102	106	93
D5-N-EtFOSA (surr.)	1	%	116	99	107	94
D7-N-MeFOSE (surr.)	1	%	102	84	90	95
D9-N-EtFOSE (surr.)	1	%	108	91	92	88
D5-N-EtFOSAA (surr.)	1	%	96	70	79	90
D3-N-MeFOSAA (surr.)	1	%	89	74	89	98
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	130	115	123	123
18O2-PFHxS (surr.)	1	%	112	109	121	118
13C8-PFOS (surr.)	1	%	113	89	104	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	118	123	126	119
13C2-6:2 FTSA (surr.)	1	%	109	84	104	112
13C2-8:2 FTSA (surr.)	1	%	108	79	91	96
13C2-10:2 FTSA (surr.)	1	%	73	52	59	60
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GW176	DW1	RW1	RW2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010108	S24-Ap0010109	S24-Ap0010110	S24-Ap0010111
Date Sampled			Apr 02, 2024	Apr 02, 2024	Apr 02, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	112	113	100	97
13C5-PFPeA (surr.)	1	%	117	114	119	104
13C5-PFHxA (surr.)	1	%	135	133	111	113
13C4-PFHpA (surr.)	1	%	112	122	107	116
13C8-PFOA (surr.)	1	%	117	123	120	120
13C5-PFNA (surr.)	1	%	109	118	104	107
13C6-PFDA (surr.)	1	%	109	119	94	107
13C2-PFUnDA (surr.)	1	%	96	110	85	100
13C2-PFDoDA (surr.)	1	%	87	104	77	103
13C2-PFTeDA (surr.)	1	%	83	102	65	95
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	105	91	106	98
D3-N-MeFOSA (surr.)	1	%	109	96	91	98
D5-N-EtFOSA (surr.)	1	%	115	100	101	105
D7-N-MeFOSE (surr.)	1	%	94	98	93	99
D9-N-EtFOSE (surr.)	1	%	102	108	90	95
D5-N-EtFOSAA (surr.)	1	%	94	95	82	84
D3-N-MeFOSAA (surr.)	1	%	88	95	86	94
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.02	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			GW176	DW1	RW1	RW2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S24-Ap0010108	S24-Ap0010109	S24-Ap0010110	S24-Ap0010111
Date Sampled			Apr 02, 2024	Apr 02, 2024	Apr 02, 2024	Apr 02, 2024
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
13C3-PFBS (surr.)	1	%	130	131	119	120
18O2-PFHxS (surr.)	1	%	123	111	112	117
13C8-PFOS (surr.)	1	%	100	101	88	114
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	123	134	109	111
13C2-6:2 FTSA (surr.)	1	%	114	105	101	95
13C2-8:2 FTSA (surr.)	1	%	87	98	94	103
13C2-10:2 FTSA (surr.)	1	%	58	62	55	56
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.02	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.02	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			RW3	BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ap0010112	S24-Ap0010113
Date Sampled			Apr 03, 2024	Apr 02, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	102	114
13C5-PFPeA (surr.)	1	%	113	124
13C5-PFHxA (surr.)	1	%	115	137
13C4-PFHpA (surr.)	1	%	112	126
13C8-PFOA (surr.)	1	%	126	145
13C5-PFNA (surr.)	1	%	103	116
13C6-PFDA (surr.)	1	%	105	117
13C2-PFUnDA (surr.)	1	%	88	99

Client Sample ID			RW3	BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ap0010112	S24-Ap0010113
Date Sampled			Apr 03, 2024	Apr 02, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
13C2-PFDoDA (surr.)	1	%	92	97
13C2-PFTeDA (surr.)	1	%	98	74
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	100	100
D3-N-MeFOSA (surr.)	1	%	101	95
D5-N-EtFOSA (surr.)	1	%	113	106
D7-N-MeFOSE (surr.)	1	%	96	94
D9-N-EtFOSE (surr.)	1	%	99	95
D5-N-EtFOSAA (surr.)	1	%	86	91
D3-N-MeFOSAA (surr.)	1	%	84	99
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	113	126
18O2-PFHxS (surr.)	1	%	116	120
13C8-PFOS (surr.)	1	%	101	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	107	129
13C2-6:2 FTSA (surr.)	1	%	87	108
13C2-8:2 FTSA (surr.)	1	%	94	91
13C2-10:2 FTSA (surr.)	1	%	53	61

Client Sample ID			RW3	BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ap0010112	S24-Ap0010113
Date Sampled			Apr 03, 2024	Apr 02, 2024
Test/Reference	LOR	Unit		
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Sydney	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Apr 05, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Apr 05, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6292
Report #: 1084457
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Apr 4, 2024 5:34 PM
Due: Apr 12, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	GW164	Apr 02, 2024		Water	S24-Ap0010096	X
2	GW165	Apr 02, 2024		Water	S24-Ap0010097	X
3	GW166	Apr 02, 2024		Water	S24-Ap0010098	X
4	GW167	Apr 02, 2024		Water	S24-Ap0010099	X
5	GW168	Apr 02, 2024		Water	S24-Ap0010100	X
6	GW169	Apr 02, 2024		Water	S24-Ap0010101	X
7	GW170	Apr 02, 2024		Water	S24-Ap0010102	X
8	GW171	Apr 02, 2024		Water	S24-Ap0010103	X
9	GW172	Apr 02, 2024		Water	S24-Ap0010104	X
10	GW173	Apr 03, 2024		Water	S24-Ap0010105	X
11	GW174	Apr 03, 2024		Water	S24-Ap0010106	X
12	GW175	Apr 02, 2024		Water	S24-Ap0010107	X
13	GW176	Apr 02, 2024		Water	S24-Ap0010108	X

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6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Site# 2370

Eurofins Environment Testing NZ Ltd
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6292
Report #: 1084457
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Apr 4, 2024 5:34 PM
Due: Apr 12, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Sydney Laboratory - NATA # 1261 Site # 18217						X
14	DW1	Apr 02, 2024		Water	S24-Ap0010109	X
15	RW1	Apr 02, 2024		Water	S24-Ap0010110	X
16	RW2	Apr 02, 2024		Water	S24-Ap0010111	X
17	RW3	Apr 03, 2024		Water	S24-Ap0010112	X
18	BLANK	Apr 02, 2024		Water	S24-Ap0010113	X
Test Counts						18

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	98			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	100			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	105			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	107			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	92			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	101			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	124			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	112			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	93			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	115			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	95			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	106			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	117			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	99			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	98			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	127			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	105			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	108			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	96			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	101			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S24-Ap0010096	CP	%	91			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ap0010096	CP	%	92			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ap0010096	CP	%	99			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ap0010096	CP	%	103			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ap0010096	CP	%	97			50-150	Pass	
Perfluorononanoic acid (PFNA)	S24-Ap0010096	CP	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ap0010096	CP	%	102			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ap0010096	CP	%	96			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ap0010096	CP	%	93			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ap0010096	CP	%	101			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ap0010096	CP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S24-Ap0011978	NCP	%	93			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ap0011978	NCP	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ap0011978	NCP	%	105			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ap0011978	NCP	%	101			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ap0011978	NCP	%	107			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ap0011978	NCP	%	105			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ap0011978	NCP	%	108			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S24-Ap0011978	NCP	%	69			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ap0011978	NCP	%	103			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ap0011978	NCP	%	67			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ap0011978	NCP	%	80			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ap0011978	NCP	%	86			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ap0011978	NCP	%	102			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ap0011978	NCP	%	54			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ap0011978	NCP	%	78			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ap0011978	NCP	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ap0011978	NCP	%	113			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ap0011978	NCP	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ap0011978	NCP	%	94			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S24-Ap0011977	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S24-Ap0010105	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S24-Ap0010105	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Asim Khan Analytical Services Manager



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

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VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Apr 4, 2024 5:34 PM
Eurofins reference	1084457

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 : 6.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: J.MALTMAN C.BISITS
Contact email: JMALTMAN@GEO-LOGIX.COM.AU CBISITS@GEO-LOGIX.COM.AU
Project Name: RICHMOND
Project Number: 2301034C Date Submitted: 4/4/24

Page 1 of 1
Purchase Order No: PO62912
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STANDARD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS 38 COMPOUNDS		Hold	SUITE
	GW164	2/4/24		x																							x			
	GW165	↓		x																							x			
	GW166			x																							x			
	GW167			x																							x			
	GW168			x																							x			
	GW169			x																							x			
	GW170			x																							x			
	GW171			x																							x			
	GW172	✓		x																							x			
	GW173	3/4/24		x																							x			
	GW174	3/4/24		x																							x			
	GW175	2/4/24		x																							x			
	GW176	↓		x																							x			
	DW1			x																							x			
	RW 1			x																							y			
	RW 2	↓		x																							x			
	RW 3	3/4/24		x																							y			
	BLANK	2/4/24		x																							x			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: CATRIONA BISITS Date/Time: 4/4/24 Signature:
Received by: BLAIR GAIT Date/Time: 4/4/24 5:34PM Signature:

6.9°C

1084457

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1084463-W**
Project name RICHMOND
Project ID 2301034C
Received Date Apr 04, 2024

Client Sample ID			**TW1**
Sample Matrix			**Water**
Eurofins Sample No.			**S24-Ap0010119**
Date Sampled			**Apr 02, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	127
13C5-PFPeA (surr.)	1	%	116
13C5-PFHxA (surr.)	1	%	102
13C4-PFHpA (surr.)	1	%	106
13C8-PFOA (surr.)	1	%	109
13C5-PFNA (surr.)	1	%	107
13C6-PFDA (surr.)	1	%	87
13C2-PFUnDA (surr.)	1	%	53
13C2-PFDoDA (surr.)	1	%	49
13C2-PFTeDA (surr.)	1	%	25
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	100
D3-N-MeFOSA (surr.)	1	%	30

Client Sample ID			TW1
Sample Matrix			Water
Eurofins Sample No.			S24-Ap0010119
Date Sampled			Apr 02, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	30
D7-N-MeFOSE (surr.)	1	%	48
D9-N-EtFOSE (surr.)	1	%	37
D5-N-EtFOSAA (surr.)	1	%	50
D3-N-MeFOSAA (surr.)	1	%	70
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	112
18O2-PFHxS (surr.)	1	%	120
13C8-PFOS (surr.)	1	%	108
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	110
13C2-6:2 FTSA (surr.)	1	%	67
13C2-8:2 FTSA (surr.)	1	%	130
13C2-10:2 FTSA (surr.)	1	%	30
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Apr 09, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Apr 09, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Apr 09, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Apr 09, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Apr 05, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6292
Report #: 1084463
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Apr 4, 2024 5:34 PM
Due: Apr 12, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	TW1	Apr 02, 2024		Water	S24-Ap0010119	X
Test Counts						1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	91			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	75			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	72			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	87			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	98			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	90			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	93			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	91			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	62			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	97			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	75			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	84			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	87			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	88			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	72			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	73			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	78			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	80			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	72			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	80			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	71			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	76			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	79			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	77			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	50			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	77			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	73			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	74			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M24-Ap0017034	NCP	%	122			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ap0017034	NCP	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ap0017034	NCP	%	86			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ap0017034	NCP	%	71			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ap0017034	NCP	%	94			50-150	Pass	
Perfluorononanoic acid (PFNA)	M24-Ap0017034	NCP	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ap0017034	NCP	%	98			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ap0017034	NCP	%	98			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ap0017034	NCP	%	101			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ap0017034	NCP	%	77			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ap0017034	NCP	%	104			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M24-Ap0017034	NCP	%	89			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ap0017034	NCP	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ap0017034	NCP	%	77			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ap0017034	NCP	%	115			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ap0017034	NCP	%	82			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ap0017034	NCP	%	80			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ap0017034	NCP	%	77			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M24-Ap0017034	NCP	%	82			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ap0014123	NCP	%	76			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ap0017034	NCP	%	50			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ap0017034	NCP	%	81			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ap0017034	NCP	%	76			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ap0014123	NCP	%	79			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ap0017034	NCP	%	77			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ap0017034	NCP	%	65			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ap0017034	NCP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ap0014123	NCP	%	78			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ap0017034	NCP	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ap0017034	NCP	%	75			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ap0014122	NCP	ug/L	0.02	0.02	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ap0014122	NCP	ug/L	0.05	0.05	3.0	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ap0014122	NCP	ug/L	0.02	0.02	2.6	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Ap0014122	NCP	ug/L	0.02	0.03	1.4	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ap0014122	NCP	ug/L	0.02	0.03	3.4	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ap0014122	NCP	ug/L	0.18	0.19	5.3	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ap0014122	NCP	ug/L	0.02	0.02	3.6	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ap0014122	NCP	ug/L	0.50	0.49	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ap0014122	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ap0014122	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Asim Khan	Analytical Services Manager
Joseph Edouard	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

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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NZBN: 9429046024954

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Apr 4, 2024 5:34 PM
Eurofins reference	1084463

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 : 6.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: J. MALTMAN C. BISITS
Contact email: JMALTMAN@GEO-LOGIX.COM.AU CBISITS@GEO-LOGIX.COM.AU
Project Name: RICHMOND
Project Number: 2301034C Date Submitted: 4/4/24

Purchase Order No: PO 62983
Quote Reference: 230714 GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STANDARD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify**	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS 30 compounds		Hold	SUITE
	TW1	2/4/24		X				SEND TO EUROFINS IN MELBOURNE																				X			

Eurofins MGT Suite Codes	
B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: CATRIONA BISITS Date/Time: 4/4/24 Signature: Received by: Date/Time: Signature:

10034463

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

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: **David Gregory**

Report **1054231-W**
Project name RICHMOND
Project ID 2301034C
Received Date Dec 14, 2023

Client Sample ID			**DW6**	**DW7**	**DW8**	**DW9**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-De0035881**	**S23-De0035882**	**S23-De0035883**	**S23-De0035884**
Date Sampled			**Dec 12, 2023**	**Dec 12, 2023**	**Dec 12, 2023**	**Dec 12, 2023**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.06	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	0.02	< 0.01	0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.02	0.01	< 0.01	0.02
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.03	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	30	114	88	107
13C5-PFPeA (surr.)	1	%	102	120	85	123
13C5-PFHxA (surr.)	1	%	114	131	116	123
13C4-PFHpA (surr.)	1	%	110	115	117	121
13C8-PFOA (surr.)	1	%	97	135	104	140
13C5-PFNA (surr.)	1	%	94	111	97	119
13C6-PFDA (surr.)	1	%	76	123	82	133
13C2-PFUnDA (surr.)	1	%	64	130	72	119
13C2-PFDoDA (surr.)	1	%	40	135	57	156
13C2-PFTeDA (surr.)	1	%	12	85	16	176
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	87	142	90	128
D3-N-MeFOSA (surr.)	1	%	29	123	54	140

Client Sample ID			DW6	DW7	DW8	DW9
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-De0035881	S23-De0035882	S23-De0035883	S23-De0035884
Date Sampled			Dec 12, 2023	Dec 12, 2023	Dec 12, 2023	Dec 12, 2023
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	24	105	47	140
D7-N-MeFOSE (surr.)	1	%	47	116	62	130
D9-N-EtFOSE (surr.)	1	%	38	134	54	142
D5-N-EtFOSAA (surr.)	1	%	50	144	67	130
D3-N-MeFOSAA (surr.)	1	%	57	115	70	116
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	0.01	0.02	[N09]0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	119	135	117	122
18O2-PFHxS (surr.)	1	%	106	120	107	124
13C8-PFOS (surr.)	1	%	95	121	98	127
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	162	142	INT	157
13C2-6:2 FTSA (surr.)	1	%	99	114	137	105
13C2-8:2 FTSA (surr.)	1	%	129	142	181	138
13C2-10:2 FTSA (surr.)	1	%	55	177	70	200
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.01	0.03	0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	0.05	0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.01	0.06	0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	0.12	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	0.12	< 0.1

Client Sample ID			DW10	DW11	DW12
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S23-De0035885	S23-De0035886	S23-De0035890
Date Sampled			Dec 12, 2023	Dec 13, 2023	Dec 13, 2023
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.02	0.02	0.03
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.02	0.01	0.03
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.02

Client Sample ID			DW10	DW11	DW12
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S23-De0035885	S23-De0035886	S23-De0035890
Date Sampled			Dec 12, 2023	Dec 13, 2023	Dec 13, 2023
Test/Reference	LOR	Unit			
Perfluoroalkyl carboxylic acids (PFCAs)					
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	77	85	49
13C5-PFPeA (surr.)	1	%	92	97	54
13C5-PFHxA (surr.)	1	%	100	102	59
13C4-PFHpA (surr.)	1	%	93	97	59
13C8-PFOA (surr.)	1	%	95	98	57
13C5-PFNA (surr.)	1	%	88	90	50
13C6-PFDA (surr.)	1	%	78	73	43
13C2-PFUnDA (surr.)	1	%	65	81	36
13C2-PFDoDA (surr.)	1	%	60	71	24
13C2-PFTeDA (surr.)	1	%	32	42	INT
Perfluoroalkyl sulfonamido substances					
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	91	97	52
D3-N-MeFOSA (surr.)	1	%	75	92	35
D5-N-EtFOSA (surr.)	1	%	77	92	35
D7-N-MeFOSE (surr.)	1	%	58	69	33
D9-N-EtFOSE (surr.)	1	%	57	60	28
D5-N-EtFOSAA (surr.)	1	%	63	74	36
D3-N-MeFOSAA (surr.)	1	%	72	78	36
Perfluoroalkyl sulfonic acids (PFSAs)					
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	0.01	0.02
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	0.03	0.03	0.06
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	105	105	63
18O2-PFHxS (surr.)	1	%	97	103	60
13C8-PFOS (surr.)	1	%	91	99	51

Client Sample ID			DW10	DW11	DW12
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S23-De0035885	S23-De0035886	S23-De0035890
Date Sampled			Dec 12, 2023	Dec 13, 2023	Dec 13, 2023
Test/Reference	LOR	Unit			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	150	133	98
13C2-6:2 FTSA (surr.)	1	%	76	85	47
13C2-8:2 FTSA (surr.)	1	%	146	167	67
13C2-10:2 FTSA (surr.)	1	%	62	79	33
PFASs Summations					
Sum (PFHxS + PFOS)*	0.01	ug/L	0.03	0.04	0.08
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.03	0.03	0.08
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.03	0.04	0.1
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.07	0.07	0.17
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	0.17

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	Dec 27, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Dec 27, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Dec 27, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Dec 27, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Dec 19, 2023	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
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NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: 6168JU
Report #: 1054231
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Dec 14, 2023 5:15 PM
Due: Jan 8, 2024
Priority: 15 Day
Contact Name: David Gregory

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	DW6	Dec 12, 2023		Water	S23-De0035881	X
2	DW7	Dec 12, 2023		Water	S23-De0035882	X
3	DW8	Dec 12, 2023		Water	S23-De0035883	X
4	DW9	Dec 12, 2023		Water	S23-De0035884	X
5	DW10	Dec 12, 2023		Water	S23-De0035885	X
6	DW11	Dec 13, 2023		Water	S23-De0035886	X
7	DW12	Dec 13, 2023		Water	S23-De0035890	X
Test Counts						7

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit	**Colour:** Pt-Co Units	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 70 – 130%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	106			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	117			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	102			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	111			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	113			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	94			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	117			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	137			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	113			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	97			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	110			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	106			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	100			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	115			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	109			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	104			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	100			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	90			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	108			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	114			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	112			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	121			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	139			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	126			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S23-De0035867	NCP	%	98			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S23-De0035867	NCP	%	105			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S23-De0035867	NCP	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-De0035867	NCP	%	111			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S23-De0035867	NCP	%	109			50-150	Pass	
Perfluorononanoic acid (PFNA)	S23-De0035867	NCP	%	111			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S23-De0035867	NCP	%	111			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-De0035867	NCP	%	102			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-De0035867	NCP	%	110			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-De0035867	NCP	%	103			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S23-De0035867	NCP	%	103			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-De0035867	NCP	%	117			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-De0035867	NCP	%	116			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-De0035867	NCP	%	98			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-De0035867	NCP	%	104			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-De0035867	NCP	%	109			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-De0035867	NCP	%	111			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S23-De0035867	NCP	%	89			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-De0035867	NCP	%	98			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-De0035867	NCP	%	84			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-De0035867	NCP	%	82			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-De0035867	NCP	%	99			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-De0035867	NCP	%	98			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-De0035867	NCP	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-De0035867	NCP	%	85			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-De0035867	NCP	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-De0035867	NCP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-De0035867	NCP	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-De0035867	NCP	%	107			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-De0021655	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-De0035865	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S23-De0035865	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Ursula Long — Analytical Services Manager



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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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	David Gregory
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	15 Day
Date/Time received	Dec 14, 2023 5:15 PM
Eurofins reference	1054231

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 : 10.4 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to David Gregory - dgregory@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Page 1 of 1

Purchase Order No: PO#6168JU

Project Manager: David Gregory

Contact email: dgregory@geo-logix.com.au; sbolton@geo-logix.com.au; jmaltman@geo-logix.com.au

Project Name: Richmond

Project Number: 2301034C

Date Submitted: 14/12/2023

Quote Reference: 230714GLXN

Send Invoice to: accounts@geo-logix.com.au

TAT required: Standard

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	PFAS - 30 compounds	Hold	SUITE
	DW6	12/12/23		✓					✓		
	DW7	↓		✓					✓		
	DW8			✓					✓		
	DW9			✓					✓		
	DW10	↓		✓					✓		
	DW11	13/12/23		✓					✓		
	DW12	↓		✓					✓		

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: S.Bolton Date/Time: 14/12/23 Signature:

Received by: Arcany Date/Time: 14/12 5.15pm Signature:

10.4

105423

Version: V1
Issued: June 2015
Review: January 2022

Geo-Logix P/L
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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: **Jenna Maltman**

Report **1088973-W**
Project name RICHMOND
Project ID 2301034C
Received Date Apr 18, 2024

Client Sample ID			**DW13**	**DW2C**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S24-Ap0047752**	**S24-Ap0047753**
Date Sampled			**Apr 17, 2024**	**Apr 17, 2024**
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.06	0.08
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	0.02	0.03
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	111	98
13C5-PFPeA (surr.)	1	%	101	88
13C5-PFHxA (surr.)	1	%	127	116
13C4-PFHpA (surr.)	1	%	138	117
13C8-PFOA (surr.)	1	%	144	127
13C5-PFNA (surr.)	1	%	122	114
13C6-PFDA (surr.)	1	%	114	93
13C2-PFUnDA (surr.)	1	%	90	92
13C2-PFDoDA (surr.)	1	%	90	84
13C2-PFTeDA (surr.)	1	%	85	71
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	107	94
D3-N-MeFOSA (surr.)	1	%	81	68

Client Sample ID			DW13	DW2C
Sample Matrix			Water	Water
Eurofins Sample No.			S24-Ap0047752	S24-Ap0047753
Date Sampled			Apr 17, 2024	Apr 17, 2024
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonamido substances				
D5-N-EtFOSA (surr.)	1	%	88	69
D7-N-MeFOSE (surr.)	1	%	98	72
D9-N-EtFOSE (surr.)	1	%	103	77
D5-N-EtFOSAA (surr.)	1	%	103	85
D3-N-MeFOSAA (surr.)	1	%	101	99
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	0.03	0.04
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	0.04	0.04
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	136	128
18O2-PFHxS (surr.)	1	%	133	120
13C8-PFOS (surr.)	1	%	111	106
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	INT	INT
13C2-6:2 FTSA (surr.)	1	%	165	154
13C2-8:2 FTSA (surr.)	1	%	163	159
13C2-10:2 FTSA (surr.)	1	%	88	78
PFASs Summations				
Sum (PFHxS + PFOS)*	0.01	ug/L	0.07	0.08
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.06	0.07
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.09	0.11
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.15	0.19
Sum of PFASs (n=30)*	0.1	ug/L	0.15	0.19

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	Apr 18, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Sydney	Apr 18, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Sydney	Apr 18, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Sydney	Apr 18, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Sydney	Apr 18, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.:
Report #: 1088973
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Apr 18, 2024 1:40 PM
Due: Apr 25, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						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	DW13	Apr 17, 2024		Water	S24-Ap0047752	X
2	DW2C	Apr 17, 2024		Water	S24-Ap0047753	X
Test Counts						2

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	101			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	104			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	102			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	103			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	114			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	103			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	112			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	110			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	104			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	105			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	104			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	97			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	105			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	112			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	98			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	107			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	95			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	106			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	100			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	92			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	93			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	89			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	109			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	101			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	76			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	109			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	R24-Ap0034751	NCP	%	102			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	R24-Ap0034751	NCP	%	97			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	R24-Ap0034751	NCP	%	109			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	R24-Ap0034751	NCP	%	106			50-150	Pass	
Perfluorooctanoic acid (PFOA)	R24-Ap0034751	NCP	%	105			50-150	Pass	
Perfluorononanoic acid (PFNA)	R24-Ap0034751	NCP	%	105			50-150	Pass	
Perfluorodecanoic acid (PFDA)	R24-Ap0034751	NCP	%	115			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	R24-Ap0034751	NCP	%	106			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	R24-Ap0034751	NCP	%	114			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	R24-Ap0034751	NCP	%	132			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	R24-Ap0034751	NCP	%	123			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	R24-Ap0034751	NCP	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	R24-Ap0034751	NCP	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	R24-Ap0034751	NCP	%	118			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	R24-Ap0034751	NCP	%	104			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	R24-Ap0034751	NCP	%	102			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	R24-Ap0034751	NCP	%	115			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	R24-Ap0034751	NCP	%	114			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	R24-Ap0034751	NCP	%	121			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	R24-Ap0034751	NCP	%	94			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	R24-Ap0034751	NCP	%	102			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	R24-Ap0034751	NCP	%	94			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	R24-Ap0034751	NCP	%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	R24-Ap0034751	NCP	%	114			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	R24-Ap0034751	NCP	%	104			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	R24-Ap0034751	NCP	%	78			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	R24-Ap0034751	NCP	%	104			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	R24-Ap0034751	NCP	%	114			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	R24-Ap0034751	NCP	%	118			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	R24-Ap0034751	NCP	%	107			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	R24-Ap0034749	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	R24-Ap0034749	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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



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

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Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Apr 18, 2024 1:40 PM
Eurofins reference	1088973

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 : 11.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au , junwin@...
Project Name: Richmond
Project Number: 2301034C Date Submitted: 17/4/24

Page ___ of ___
Purchase Order No: PO6309
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS-30 Compounds		Hold	SUITE
	DW13	17/4/24		X																							X			
	DW2C	17/4/24		X																							X			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: TC Date/Time: 17/4 Signature:
Received by: Brendan Date/Time: 18/4/24 1:40PM Signature:

1088973

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Jenna Maltman**

Report **1088979-W**
Project name RICHMOND
Project ID 2301034C
Received Date Apr 18, 2024

Client Sample ID			**TW2C**
Sample Matrix			**Water**
Eurofins Sample No.			**S24-Ap0047779**
Date Sampled			**Apr 17, 2024**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.06
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	[N09]0.02
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	58
13C5-PFPeA (surr.)	1	%	67
13C5-PFHxA (surr.)	1	%	78
13C4-PFHpA (surr.)	1	%	81
13C8-PFOA (surr.)	1	%	88
13C5-PFNA (surr.)	1	%	98
13C6-PFDA (surr.)	1	%	93
13C2-PFUnDA (surr.)	1	%	79
13C2-PFDoDA (surr.)	1	%	64
13C2-PFTeDA (surr.)	1	%	68
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	76
D3-N-MeFOSA (surr.)	1	%	52

Client Sample ID			TW2C
Sample Matrix			Water
Eurofins Sample No.			S24-Ap0047779
Date Sampled			Apr 17, 2024
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D5-N-EtFOSA (surr.)	1	%	57
D7-N-MeFOSE (surr.)	1	%	36
D9-N-EtFOSE (surr.)	1	%	40
D5-N-EtFOSAA (surr.)	1	%	67
D3-N-MeFOSAA (surr.)	1	%	89
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	[N09]0.03
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]0.03
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	82
18O2-PFHxS (surr.)	1	%	81
13C8-PFOS (surr.)	1	%	84
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	122
13C2-6:2 FTSA (surr.)	1	%	147
13C2-8:2 FTSA (surr.)	1	%	127
13C2-10:2 FTSA (surr.)	1	%	71
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	0.06
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.05
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.08
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.14
Sum of PFASs (n=30)*	0.1	ug/L	0.14

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	Apr 22, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	Apr 22, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	Apr 22, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	Apr 22, 2024	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
PFASs Summations	Melbourne	Apr 18, 2024	
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	Site# 25079 & 25289

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35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: RICHMOND
Project ID: 2301034C

Order No.: PO6310
Report #: 1088979
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Apr 18, 2024 1:40 PM
Due: Apr 26, 2024
Priority: 5 Day
Contact Name: Jenna Maltman

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	TW2C	Apr 17, 2024		Water	S24-Ap0047779	X
Test Counts						1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
PFASs Summations							
Sum (PFHxS + PFOS)*	ug/L	< 0.01			0.01	Pass	
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	< 0.01			0.01	Pass	
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	ug/L	< 0.01			0.01	Pass	
Sum of WA DWER PFAS (n=10)*	ug/L	< 0.05			0.05	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	91			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	88			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	116			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	117			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorononanoic acid (PFNA)	%	88			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	94			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	93			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	91			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	95			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	96			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	88			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	107			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	79			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	87			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	89			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	99			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	98			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	95			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	91			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	94			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	82			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	93			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M24-Ap0026924	NCP	%	83			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ap0026924	NCP	%	84			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ap0026924	NCP	%	84			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ap0026924	NCP	%	108			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ap0026924	NCP	%	111			50-150	Pass	
Perfluorononanoic acid (PFNA)	M24-Ap0026924	NCP	%	83			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ap0026924	NCP	%	86			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ap0026924	NCP	%	88			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ap0026924	NCP	%	83			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ap0026924	NCP	%	79			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ap0026924	NCP	%	85			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M24-Ap0026924	NCP	%	89			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ap0026924	NCP	%	90			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ap0026924	NCP	%	80			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ap0026924	NCP	%	86			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ap0026924	NCP	%	86			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ap0026924	NCP	%	83			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ap0026924	NCP	%	84			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	M24-Ap0026924	NCP	%	93			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ap0026924	NCP	%	78			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ap0026924	NCP	%	90			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ap0026924	NCP	%	78			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ap0026924	NCP	%	84			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ap0026924	NCP	%	84			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ap0026924	NCP	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ap0026924	NCP	%	66			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ap0026924	NCP	%	79			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ap0026924	NCP	%	88			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ap0026924	NCP	%	87			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ap0026924	NCP	%	85			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M24-Ap0026923	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M24-Ap0026923	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Nileshni Goundar	Analytical Services Manager
Joseph Edouard	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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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	Geo-Logix P/L
Contact name:	Jenna Maltman
Project name:	RICHMOND
Project ID:	2301034C
Turnaround time:	5 Day
Date/Time received	Apr 18, 2024 1:40 PM
Eurofins reference	1088979

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 : 11.1 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Analysis sent to Melbourne. Please confirm?

Contact

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

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Jenna Maltman - jmaltman@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

Geo-Logix Pty Ltd
Building Q2, Level 3
2309/4 Daydream St
Warriewood, NSW 2102
ABN: 86 116 892 936
P: (02) 9979 1722
F: (02) 9979 1222

CHAIN OF CUSTODY

Project Manager: Jenna Maltman
Contact email: jmaltman@geo-logix.com.au
Project Name: Richmond
Project Number: 2301034C Date Submitted: 17/4/24

Page ___ of ___
Purchase Order No: P06310
Quote Reference: 230714GLXN
Send Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: soil	water	air	paint, filters	other	Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	VOCs	BTEXN	PAHs	PCBs	OCPs	OPPs	Phenols	Metals - M8	Metals - Lead	Metals - Specify **	TCLP	Asbestos (ID only)	Asbestos (WA DOH)	Foreign Materials	Conductivity (EC)	pH	PFAS - 30 compounds	Hold	SUITE
	TW2C																										X			

Eurofins MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO_4/CO_3/HCO_3/NH_3/NO_3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO_4/CH_4/Alk/BOD/COD/HPC/CUB
B17	SO_4/NO_3/Fe++/HPC/CUB
B18	Cl-/SO_4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K

Metals(circle)** As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Chain of Custody

Relinquished by: TC Date/Time: 18/4 Signature:
Received by: Date/Time: 18/4/24 1:40pm Signature:
11.1°C

1088979

Version: V1
Issued: June 2015
Review: January 2022

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